Original Articles.

MORTALITY OF HEREDITARY SYPHILIS.

BY ABNER POST, M.D., BOSTON.

SYPHILIS is declared by writers on the subject to be simply murderous in its hereditary manifestations.

The distinguished syphilographer, Fournier, gives the statistics of 500 syphilitic families with whose history he is acquainted, as follows: In 223 families no transmission of the disease to offspring has taken place, in 277 families such transmission has taken place.

In these 500 families, 1127 pregnancies have occurred, 600 children are reported living and well; 527, or 46%, of the pregnancies have resulted unfortunately, as follows:

Abortions and still births	230
Early deaths	245
Living and syphilitic	38
Mentally deficient	14
	527

There is a tendency to disregard syphilis in this country. It is supposed to be a disease of older countries and rare in this; it is thought to be confined to those who go to seek it and to have no interest for those whose lives are blameless. If one accepts the death returns of the country as final, one may well say that the fatalities from syphilis are negligible.

It is the good fortune of the Boston Dispensary to have in the Dermatological Clinic a large number of syphilitic children, who furnish the material for this paper,—which concerns itself chiefly with those victims of hereditary syphilis who have survived the perils of infancy. Most of those who are considered have passed the earlier period of second dentition. They range from five or six to eighteen or twenty years of age.

If one looks at the vital statistics of Massachusetts, where these children have been seen, syphilis will be found notoriously absent, hardly more important in numbers than leprosy or typhus.

But it must be remembered that no one dares to assign syphilis as a cause of death. It would probably cost a doctor his popularity and ruin his practice if he dared to append that cause of death with the same simplicity that he would write typhoid or pneumonia. One must look elsewhere than at the official death returns to know anything about the fatality of syphilis.

From the children with hereditary syphilis who appear at the Boston Dispensary Clinic, it is our custom to learn all that we can in regard not merely to the patient, but also in regard to the family. This information is obtained usually from the mother or relative who brings the child. We have tried to learn the number of deaths in the family, with the alleged causes of death, and the condition of the survivors, and in regard to the patient, enough of the life history to know how far he or she falls short of the perfect child by reason of the syphilis.

It has not been possible to analyze all our material. It is only within a short time that our records have preserved material of this sort, and in regard to many families the records are of necessity quite vague. The mortality in 30 syphilitic families has been tabulated with the following results:

In these 30 families there have been 168 pregnancies; of these pregnancies there have been 53 still births and miscarriages, and 44 early deaths—a total of 97 lost, or 57%—71 remain alive.

57% of the pregnancies are dead.

38% of the children born alive are dead.

Out of the 168 pregnancies, of the 115 children brought living to the world, there remain alive 71; of these 71, 32 have been our patients, leaving only 39 presumably healthy. In the accompanying chart our patients are represented by a cross with a straight line beneath.

It is of interest and also of value to know what is the reason for this great mortality, or of what these children die.

Probably no other disease presents the same sad history as syphilis. No attempt is anywhere made, so far as I know, to classify the causes of stillbirth.

It has already been mentioned that syphilis appears infrequently in death returns as a cause of death. It becomes, then, a question of some importance to know how these deaths are reported, for certainly they must appear on the returns in some form. No one can for a moment believe that syphilis is the only cause of death in syphilitic families. Syphilitic children readily fall victims to intercurrent disease.

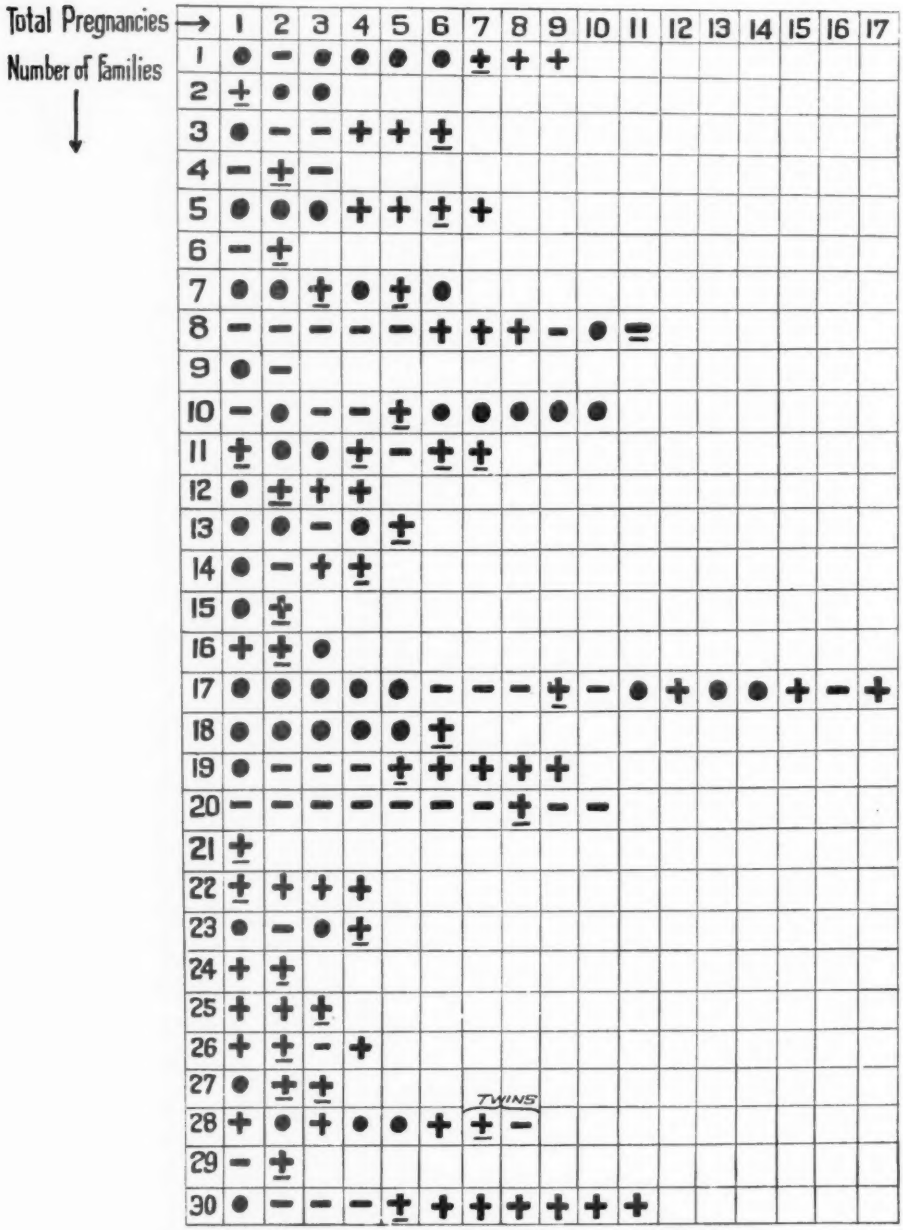
The attributed causes in 86 fatal cases in our syphilitic families, according to the mothers' accounts are as follows:

Congenital syphilis	2
Uncertain	4
Cholera infantum	25
Marasmus	27
Pneumonia	5
Hydrocephalus	5
Spinal meningitis	5
Scarlet fever	4
Chickenpox	2
Measles	2
Furunculosis	1
Diphtheria	1
Gastritis	1
Bronchitis	1
Accidental death	1

Of these causes, 25 cases of cholera infantum may, perhaps, be regarded as cases in which another disease is superimposed on a syphilitic basis, though it may be that the death could just as well have been attributed to syphilis as to cholera infantum.

Twenty-seven cases of marasmus is a striking number. Wasting is a symptom not at all un-

MORTALITY OF HEREDITARY SYPHILIS



Total Pregnancies in 30 Families ... 168
Miscarriages and Still Births ... 53
Early Deaths ... 44
97
Living Children ... 71 168
Patients ... 33
Supposedly well ... 38 71

KEY + Living Children
● Miscarriages and Still Births
− Early Deaths
± The Patient

common in inherited syphilis and it cannot be far wrong to say that the symptom of marasmus is utilized to cloak the underlying disease.[1]

In regard to the five cases of pneumonia, it must be said that a form of pneumonia is found in syphilitic children. It is syphilitic in character but it may very well be used as cause of death either from failure to recognize the underlying syphilis or purposely to hide it.

Hydrocephalus is caused by syphilis as well as by other diseases, and we are justified in believing that hydrocephalus occurring in syphilitic families is of syphilitic origin.

The diagnosis of spinal meningitis may be regarded with suspicion in this connection.

It is pretty certain that the returns for marasmus, pneumonia, hydrocephalus are falsified by reporting as such some deaths which might more properly be returned as syphilitic. How far the returns of cholera infantum are vitiated, if at all, nobody can tell. No one can for a moment believe that syphilis is the only cause of death in syphilitic families. It must be recognized that the vital resistance of these children is greatly reduced by their heredity and they readily fall victims to intercurrent disease.

Among the families introduced to our notice, but not registered in this table, are several where the disease has entered the family after the birth of one or more healthy, that is, non-syphilitic children. The contrast in mortality in these families between the earlier healthy and the later syphilitic children is very striking and seems to emphasize the fatalities due to syphilis. The earlier children show only normal death-rate, while the later show the abnormal death-rate of syphilis.

Occasionally it happens that the first child survives with signs of hereditary syphilis, while the following pregnancies end fatally. These are families in which the husband is syphilitic at the time of marriage, but not in a condition to inoculate his wife. The first child is the product of a syphilitic father and a healthy mother, and its chances of surviving are better than that of the children who immediately follow after the mother has passed through the first pregnancy and become herself syphilitic.

These 30 families were introduced to us by children who came as patients for their own bodily ills. So far we have considered the families from which they have sprung. The patients deserve our study for their own sake. They are the survivors of the numerous fatalities. Each one suffers from the inherited disease in such a way as to make him seek for medical aid, and no two are alike. Heredo-syphilitic children present an almost endless variety of symptoms, in an endless variety of groups.

[1] This note is taken from the Physicians' Pocket Reference to the International List of Causes of Death issued by the Census Bureau. "Marasmus." This term covers a multitude of worthless returns, many of which could be made definite and useful by giving the name of the diseases causing the marasmus or wasting. It has been dropped from the English Nomenclature since 1885. ("Marasmus, term no longer used.") The Bellevue Hospital Nomenclature also omits the term.

In the first place, the heredo-syphilitic child is unfinished. It is less in size and weight than normal. It is three or four years behind the normal children of its age. This incomplete, unfinished condition may be evident in the child as a whole or in any part of it. To the condition as a whole is applied the term infantilism.

The internal organs are abnormal in the same way. As these children come to us, they show their hereditary deficiencies in various degrees and also the stigmata of infantile disease. At the same time with this deficient development, there occur in some an increase in bony structure, the deposit of new bone in some circumscribed spot. Its forehead may be increased in size in various parts so that it has a projecting and abnormally large forehead. Some of the long bones have bosses or circumscribed swellings.

Of the children seen during the last year, by far the greater number were suffering from partial blindness, temporary in most of them. The number of cases of eye disease in this particular group was abnormally large because they had come primarily from an eye clinic. One of them was at the Blind Asylum, one at the Kindergarten for the Blind. All of them were unable to attend school for months at a time. One of them came from the Horace Mann School for the Deaf and Dumb.

Several are deaf, one or two completely or nearly so to ordinary conversation. Many have had operations for the removal of tonsils and adenoids. There is room for the suspicion that some of the operations, and especially the repeated operations for adenoids, done on syphilitic children, are unnecessary. The narrow nasal passages and the swollen mucous membranes of the syphilitic child occasion the same symptoms as adenoids, and the first treatment should be for the syphilis, and only when that is found unsatisfactory, the operations for adenoids.

Many children in this number are mentally deficient to a much less marked degree. Most of them are backward in school because of their various physical defects. It is by no means an easy task for a clinician to know exactly how to classify the mental condition of these children. We hope to have them studied at some future time by expert teachers.

Active processes of the disease may be still going on in various parts of the body, nose, throat, legs, eyes, ears, lymphatic glands, bones as well as internal organs,—heart, lungs, nerves and other organs. For each one of these troubles the child has ordinarily sought relief in the clinic devoted to the special organ affected. Without knowledge of the other affections or the child's history, it is often extremely difficult in these various clinics to recognize the underlying taint which is the real cause of the trouble. At these various clinics these children are treated for their various ailments, but when all has been done for their eyes or ears or throats

that can be done in the special clinics, they are discharged, very properly, but the child still needs treatment for its constitutional condition, which it does not always receive. The children, as we see them, have usually a history of visits to many clinics, where, for a time, they have been the object of care, but with the advent of new symptoms they betake themselves to some new clinic and to new physicians.

A few detailed histories will be worth any amount of description. (See accompanying chart.)

J. C. No. 1, is the result of the seventh pregnancy. The first was born dead; the second lived eight months; 3, 4, 5, and 6 were born dead. John, the seventh, is 12 years old. The eighth and ninth are also living. John, our patient, has been put back in school a good deal because of sickness; has had two operations for adenoids; has glands on the neck said to be tuberculous, but probably due to decayed teeth. He applied at the Eye and Ear Infirmary for interstitial keratitis believed to be syphilitic. He has characteristic syphilitic teeth and slight deafness. He is said to be without ambition and would like to sleep most of the time.

M. S. No. 12 on the chart, was referred to us from the Eye and Ear Infirmary for our co-operation. She is the oldest child of four, only one has been lost. Mary was a seven-months' baby. For a long time had no finger or toe nails. At one year, had pneumonia; at two, nasal obstruction. No teeth until four years old. Did not walk until 3½. Six months ago had severe pain in right leg. Is behind in school. Mother volunteers that Mary is not very bright.

In addition to interstitial keratitis, Mary has scars about mouth and nose believed to be due to syphilitic lesions in infancy. Characteristic syphilitic teeth. The pain in her leg was due to syphilitic periostitis, which is easily recognizable and which kept her awake the ght before her visit to the Dispensary.

These surviving children are well worthy of recognition by those interested in diminishing infant mortality, for they furnish the explanation of the death-rate in their families which otherwise might not be recognized. Some of the survivors live to become fathers and mothers themselves. How far they are able to transmit the disease to their own offspring is uncertain, but certainly many of them are unfit to become parents whether they actually transmit syphilis or not. From their undeveloped brains and bodies one cannot expect a very high class of citizens.

They are but examples from a large attendance at the clinic. The seriousness of the group, as it concerns the general welfare, depends largely upon the total amount of syphilis in the community. There is no census of syphilitics nor is one possible at present, but there have been attempts made to approximately learn the amount of the disease in the country. The figures fall between 15 and 20%. It is, then, from its numbers, of no inconsiderable importance, but the failure to rightly report syphilis means an addition in the report of something else. It falsifies the returns.

It would not be just to leave this subject without drawing attention to the fact that the transmission of syphilis to children is not universal. Many children of syphilitic parents are born without any taint of the disease. In the table quoted from Fournier at the beginning of this paper, it was stated that of 1127 pregnancies in 500 syphilitic families, 600 children were reported as living and well. In addition, it must be noted that time and treatment have great effect in mitigating the evil. One patient at the Boston Dispensary, a man of perhaps fifty, himself the victim of late lesions of syphilis, gave a history of his family as follows: the first child was stillborn, the second died in infancy, the third is living and the fourth is a young man in the United States Navy—a position which presupposes good health, both in mind and body.

And, now, this paper would be incomplete without a word as to the study of the disease as a whole. It is usually spoken of as a venereal disease and syphilis and gonorrhea are classed together. These two diseases are entirely separate and distinct. They owe their existence to two entirely different microscopic organisms which have no relation to each other. They need to be studied as distinct diseases and not as evidences of immorality. The physician must do his share in their prevention and control quite as much as the moralist. Syphilis is an infectious disease—conveyed by the most innocent kiss or even careless handling. No one can for an instant think of calling the children referred to in this paper sinners. Probably at least half of the syphilis in the world is innocently acquired and even the sinners are our brethren.

The desire to attach disgrace to all victims of the disease leads to concealment and difficulty in study. If we are in any way to control the disease, it is necessary to have a moderately accurate knowledge of it. The more we know of syphilis, the more formidable do its possibilities appear. The many fatalities and the possible diseases which may affect the survivors, as well as the good that may be done by supervision and medical care, not only in the way of prevention but in the amelioration and possible cure of the afflicted, it is the object of this paper to point out.

MASSACHUSETTS ANTI-TUBERCULOSIS LEAGUE.—Under the auspices of the Boston Association for the Relief and Control of Tuberculosis a meeting was recently held to organize the various tuberculosis societies of this State, now thirty-five in number, into a single central body, to be known as the Massachusetts Anti-Tuberculosis League.

A CASE OF MYATONIA CONGENITA (OPPENHEIM).

BY J. W. COURTNEY, M.D., BOSTON,

AND

H. B. EATON, CAND. MED., BOSTON.

ALTHOUGH thirteen years have elapsed since the clinical manifestations of this extraordinary disease were first described, the total number of cases on record to date is not large; consequently, we feel that this contribution may be offered without apology.

The patient is a boy of five and a half years, of healthy parents, both of whom sprang from sturdy New England stock. During the pregnancy, which terminated in an instrumental delivery at the seventh month, the child's mother felt what she assumed to be normal fetal movements. Her health was good all the while except for rather persistent and troublesome pains which she attributed to rheumatism. The birth of the patient ended the first pregnancy, and he is the only child. There have been no miscarriages.

The weight at birth was less than three pounds, and the child's head, although well-shaped, was markedly large in proportion to the body. Also, it was noticed that from the moment of birth the head tended to fall backward on the shoulders and that the neck muscles were "like jelly."

The child nursed after the first three or four days, but lay for months in a stereotyped position which strongly suggests the fetal, *i.e.* with arms folded and the feet so intertwined that the plantar surface of each was in apposition with the opposite tibia. At the outset the muscles generally are said to have been flabby in the extreme, but the disability of the lower extremities was greater than that of the upper and the proximal portion of the limbs was more affected than the distal. If an arm got extended and abducted the child could not voluntarity flex and adduct it, and vice versa. There was no apparent disturbance of intellect or special senses, the breathing was never hampered in any way and the bowel and bladder emptied themselves in normal fashion. Teething did not begin until the eighteenth month, but then progressed rapidly. Prior to this time the child could say "papa, mama," and a few other words.

The case was first seen by one of us in July, 1911. At that time the child's habit was to lie upon the belly. It could neither sit nor hold the head erect. When it was placed in the sitting position and supported under the arms, the spine showed a very marked kyphoscoliosis and the head fell backward and to the right. There was more or less constant drooling; nevertheless, the intellect was in nowise below par and the patient showed the usual quota of cunning traits peculiar to children at that age. The speech was somewhat difficult of comprehension, but the vocabulary was normal. The head was noticeably large but well proportioned, the fontanelles were closed, the eyes clear and alert, the facial expression mobile. The pupils were equal, regular in outline and prompt in their response to light and distance. The facial and ocular muscles, tongue and soft palate were normal, likewise deglutition. The tracery of the temporal veins in the somewhat pallid skin was rather striking. The respiratory movement was not restricted; the heart area and sounds were normal, the pulse in no way remarkable. All the tendon reflexes were absolutely unobtainable. The epigastric, belly, cremasteric and plantar reflexes were present but sluggish, in fact, cutaneous sensibility in general seemed rather below normal. There was no rosary and no epiphyseal enlargements.

The most striking feature of the case was the motor impotency of the child and the muscular conditions which underlay it. Everywhere the muscle-bellies seemed thin and flat, but, nevertheless, did not for a moment give the impression of a true atrophy of spinal or neuritic origin. The thinness was most marked throughout the right half of the neck posteriorly and the right side of the back. This accounted for the falling of the head backward and to the right and for the kyphoscoliosis respectively.

Very striking was the poverty of muscle-fibre—and we may add subcutaneous fat—in the arms. The chest and belly muscles seemed fairly adequate. Those of the thigh and leg were even more normal in contour and consistency than the last named, but utterly incapable of contracting voluntarily with any degree of vigor. It is to be regretted that no neuro-muscular electrical tests were made at this time.

The patient was ordered five grains of calcium lactate suspended in milk three times daily, and directly following the visit was taken to the seashore where it had the advantage of out-door life and sea-bathing. The progress made was most satisfactory. At the end of six weeks the child could sit up alone, although the head still fell backward and to the right and the kyphoscoliosis was extreme. At this time, also, the knee- and ankle-jerks were present and the cutaneous reflexes fairly prompt.

During the winter of 1912 codliver oil was steadily given and the dietary and hygienic conditions carefuly attended to. The acquisition of muscular strength was constant. Before the end of the winter the child could sit in a chair and cross his legs and, by holding on to his mother's hand, could take a few steps. He gained noticeably in weight and drooled only when very tired.

In March, 1913, the patient developed chicken-pox which was followed by diphtheria. He was ill five weeks and lost ground considerably in consequence, but fortunately escaped a post-diphtheritic paralysis. After this illness he was taken to the sea-shore where he gained to such an extent that in September he could use his hands fairly well, walk about the room unassisted and make his way over the stairs.

At the present time, last of October, 1913, the boy is well-nourished and has good color. He is bright and alert mentally and his articulation is fairly clear. He drools only when very tired. Height 42¾ in., weight 38½ pounds. The head, which still tends to fall backward and to the right, shows the following measurements: circumference 53 cm., ear to ear over sinciput 34 cm., glabella to inion 33 cm. The gait is extraordinary and difficult to describe. Before starting to cross a room the boy stands in an attitude which suggests that of a sprinter on his mark. One arm is thrust directly in front of him, the other behind. The gait is a mixture of ataxia and steppage and, withal, there is in it a suggestion of the peculiar vibratile quality observed in that of multiple sclerosis. The head waggles concomitantly. Once started the patient seems unable to stop until

some obstacle is encountered. Station in the Romberg position is impossible; with the eyes open and the feet apart there is no special swaying, but the knees are markedly hyperextended and the right foot pronated. The pupils are middle-wide, equal, regular in outline and normal to tests of light and distance. The facial and ocular muscles, tongue and soft palate are normal. Fundi healthy. The heart and lungs are normal. Chest circumference 52 cm. The spine shows a lesser degree of kyphoscoliosis. It is the child's wont to keep the fingers flexed in the palm with the thumb underneath, but there is absolutely no spasm or contracture. The finer coördinative movements of fingers and hands are quite impossible. For example, the boy cannot deftly pick up even the plug of a small Faradic battery and insert it in its orifice. In the attempt to perform the latter part of this feat the hand gyrates about the orifice in circles of varying circumference, but the goal is never attained. Meantime the head waggles concomitantly, precisely as it does when walking is attempted. Nevertheless, with solid foods the patient feeds himself fairly well. The musculature of body and limbs has developed fairly satisfactorily both in volume and strength, but the local disproportions noted above are still in evidence. Curiously enough, neuro-muscular response to even mild Faradic stimulation is everywhere equally prompt. The deep and superficial reflexes are all normal.

It requires no special diagnostic acumen to differentiate a typical case of myatonia congenita, like the above, from other conditions which, in a limited number of features, resemble it. The peculiar character of the muscle defect, the fact that this defect is present in its maximum intensity at or shortly after birth, and the further fact that the morbid process is regressive all combine to distinguish this process from whatever underlies all other myopathies and spinal atrophies, and to place upon its symptom-complex the cachet of a genuine clinical entity.

It will be remembered that Oppenheim[1], entirely without the support of pathologic data, believed, at the time he first described the disease in question, that an incomplete genesis of the muscular system was the essential underlying morbid factor, although he did not absolve the anterior horn cells from all connection with this retardation of muscular development. As a matter of fact, actual pathologic investigations, although few in number, seem, in the main, to bear out the Oppenheim theory. We shall refer, however, without prejudice, only to the article of Archangelsky[2] and Abrikosoff, because their case seems to us clinically typical and, at the same time, we are strongly impressed by the completeness and apparent exactitude of their pathologic findings.

These observers report the case of a female infant who came under the observation of one of them (Archangelsky) at the age of three and one-half months. The child's parents were disturbed by its slow gain in weight (only one pound in three months) and its inability to move the limbs. The child looked anemic; the nutritional state was satisfactory (!); the vertebral column of normal configuration. The thorax was deformed to a marked degree—the sternum protruded sharply, and the chest walls were so sunken that on inspiration the middle portions of the ribs of one side appeared to rub against those of the other. The borders of the lowest ribs were prominent. There was no rosary. The belly was big and flabby, and in contrast to the narrow thorax appeared really enormous. The respiration was clearly diaphragmatic. On inspiration the belly increased in size to a marked degree. The respirations were seventy to the minute and were associated with strong retractions in the region of the insertion-points of the diaphragm.

The most striking feature of the case was the almost absolute immobility of the child. When taken from its bed and placed upon a pillow it assumed a whining expression, while the entire body, extremities and head remained entirely motionless.

The characteristic position of the child was that of a person crucified. The legs were extended, the arms abducted and somewhat flexed at the elbows, the hands resting upon their ulnar borders, with the little fingers bent in such a way that they almost came in contact with the outer side of the corresponding fifth metacarpal bones.

With the child raised in the vertical position the head fell limply and indifferently either forward or backward. Passive motion of the limbs could be carried to almost any extent without apparent pain. Voluntary contraction was limited to one or two muscles and was feeble and restricted in extent. For example, sharp pricking of hands and feet caused but slight movement of the distal portion of these extremities. The child seemed alert to what was going on about it and the excursion of the eyeballs was not limited. The pupils were equal and prompt to light. There was no nystagmus, and the muscles of the face, tongue, soft palate and pharynx were normal. The hearing seemed undisturbed, and the voice was clear but weak. Internal organs healthy. The tendon reflexes were entirely absent, likewise the plantar. The exact status of general sensibility was difficult to determine. While the other muscles were scarcely palpable; both biceps felt like thin, somewhat tense, strings.

The family history was negative, and the child's mother stated that the pregnancy was normal, although throughout the entire second half of it fetal movements were but feebly felt. The birth itself took place at the regular time and was normal in every way. No instruments were used. The weight of the apparently normally-developed newborn was 8½ pounds (3½ kg.). Its exact condition during the first month of life was difficult to determine, although the concensus of opinion of those concerned with its care was to the effect that during this period not even the slight movements of the fingers observed in the second month were present. At the beginning of the second month an electrical examination disclosed a complete lack of response of the muscles everywhere on neck, trunk, and extremities to even a very strong Faradic current.

Toward the end of the third month of life the child began to lose rapidly in weight and the loss continued up to the time of its death, which came suddenly, about the middle of the fourth month, from acute pneumonia. Archangelsky was astonished to observe that in spite of the marked and progressive loss of weight, voluntary motion steadily increased. Only the week before its death the child, lying supine, could move its head sidewards to some extent, and could, when supported in a vertical posi-

tion, maintain the head erect for several moments. It was also able to raise the hands to the mouth and, with the knees bent, to abduct and adduct the thighs.

The necropsy, made sixteen hours after death, may well serve as a model for all future investigators. Not an organ, not a shred of tissue that might throw a ray of light on the pathology of myatonia congenita was neglected. Macroscopically this searching investigation revealed only the following abnormalities: (1) Varying degrees of hindered development, pallor and flabbiness of all the voluntary muscles; (2) Pial edema throughout brain and cord (3) Moderate venous engorgement and edema throughout the tissues of cerebrum, cerebellum and cord; (4) Unusual thinness of ventral roots throughout the cord, but most marked in the lumbar region; (5) Catarrhal broncho-pneumonia and (6) Ovarian cysts of varying sizes. The anterior fontanelle was wide open, and all signs of rachitis were lacking.

The detailed description of the microscopical examination is too long to reproduce in its entirety. From the side of the nervous system the findings were, briefly, as follows: (1) A persistance of the remains of the peripheral granular layer of the cerebellum. Incidentally, this may be regarded, in part, as an individual peculiarity not infrequently encountered at the age in question; (2) An incomplete myelinization of the pyramidal tracts and Gower's bundle—both structures in which the fibres are not ordinarily fully myelinized until after birth; (3) Absence of the normal nerve-cell grouping in the posterior horns (absence of Clarke's column), with presence in these parts of numerous small multipolar cells; (4) In the lateral horns substitution of many small multipolar cells for the usual large cells; (5) In the anterior horns marked reduction in the number of nerve-cells, with entire absence of large ganglion cells and presence of a few scattered small multipolar cells. Here all nerve-cells appear small, as shown by diminished size of cell-bodies, nuclei and nucleoli. No signs of degenerative changes. The number of nerve-fibres in the gray matter is reduced and the majority of them lack myelin sheaths: (6) In the lateral anterior roots numerous amyelinized axis-cylinders and empty neurilemmata, together with cylinders which are myelinized but thinner than normal; (7) In the median anterior roots nearly complete absence of myelinized fibres, with a peculiar swelling of the amyelinized; (8) In the peripheral nerves a combination of myelinized and amyelinized fibres, with empty neurilemmata. No actual degenerative changes.

In the muscular system the following findings are recorded: "All the voluntary muscles, with the exception of the diaphragmatic, facial, pharyngeal and laryngeal, are very slender in consequence of the extremely marked thinness of the majority of the within-retained muscle-fibres; there are no signs of gradual muscle atrophy, no proliferation of nuclei, interstitial connective or fat tissues."

As Archangelsky and Abrikosoff view the problem, the question to be resolved, as far as the nervous system is concerned, is whether we are dealing with absent or impaired development of the gray substance of the cord, anterior roots and peripheral nerves or with an actual degenerative process in the same. For these authors the absence of the normal nerve-cell grouping of the gray substance, the complete absence of Clarke's columns, the great number of cells in the substantia Rolandii (suggesting embryonal conditions), further, the presence of very numerous multipolar nerve-cells irregularly distributed in the gray substance of the lateral and posterior horns—all may indicate an interference with the normal distribution and growth of the nerve-cells. On the other hand they point out the fact that the primary development of the ganglion cells of the anterior horns begins very early (before the fourth embryonal week) and hesitate to explain the absence of these cells on the ground of hindered development, because it seems to them highly probable that the hindering process would also exert a deleterious influence upon the development of the horns themselves. They recognize, moreover, the existence of atrophic processes in nerve-cells characterized by diminution in size or even by complete disappearance, without grave change in their structure. This fact complicates the solution of the problem, even though not all the changes found can be attributed to such an atrophic process.

The character of the changes in the nerve-fibres in the gray substance is regarded as of no importance in the solution of the pathologic problem, since these changes could equally well come either from hindered development or from atrophy of the nerve-cells.

Of far greater importance to the above-mentioned authors is the character of the changes in the anterior roots and the peripheral nerves. They note that in spite of the small content of myelinated fibres and of axis-cylinders deprived of their sheaths (lateral groups) and, further, in spite of the almost complete absence of the same (median groups), the mass of roots in its entirety does not seem to be correspondingly diminished but, to a certain degree, retains its normal area. They note, furthermore, that on cross sections of the roots a mesh-like structure is apparent, whose lumina and the arrangement thereof point absolutely to absent nerve fibres. And from this circumstance they conclude that, beyond all doubt, at least a part of the nerve-fibres of the anterior roots have undergone some sort of degenerative process and disappeared, leaving behind only empty nerve-sheaths.

From the above pathologic data Archangelsky and Abrikosoff conclude, finally, that two kinds of changes are present in the spinal cord; 1. A hindered development of its gray substance—as shown by the lessened dimensions of the cells of the lateral and posterior horns, the interference with the customary grouping-process of these cells, the thinness of the myelinized fibres and the axis-cylinders of the anterior roots, the absence of myelinization of the majority of the nerve-fibres of the gray substance, anterior roots and peripheral nerves and the embryonal appearance of the substantia Rolandii. 2. Degenerative changes of the cells (simple atrophy)—as shown by the failure, for the most part, of the cells of the anterior horns and

the disappearance of a portion of the nerve-fibres in the anterior roots and peripheral nerves (empty neurilemmata).

The changes in the muscular system are unhesitatingly ascribed by Archangelsky and Abrikosoff to hindered development (hypoplasia) of the muscle-tissue, as evidenced by the uniform thinness of the muscle-fibres—with complete preservation of their structure—and the absence of nuclear proliferation and increase of interstitial tissue.

A point much more difficult for these authors to make clear to their entire satisfaction is the connection between the hindered muscle development and the changes in the spinal cord. They finally conclude, however, that the paralysis and atony of the musculature spring from hindered development of all peripheral motor neurons, but chiefly from a hindered development of the muscle-tissue, which is contemporaneous with that of the cord. The disappearance of the feebly developed anterior horn ganglion cells they regard as secondary and as a result of the consecutive atrophy of these cells.

To the present writers the term—myatonia congenita—seems satisfactory from a clinical standpoint, for the reason that the muscular atony which characterizes it does certainly dominate the picture. On the other hand, the pathology ascribed to it by Oppenheim and subsequent observers impresses us as too narrow in conception.

Its exact pathogenesis must, for the present at least, remain shrouded in obscurity. We venture to suggest, however, a probable correspondence between its pathogenetic factors and those which act upon the primary embryonal tissues in such a way as to bring about spina bifida or hare-lip. Just how early in fetal life the developmental activities are arrested we do not pretend to say. Archangelsky and Abrikosoff, in their case, found muscle-fibres morphologically and structurally identical with those ordinarily observed in the third or fourth fetal month, while our own case has, so far as we know, the distinction of being the first to exhibit the typical picture of the disease at the end of the seventh.

Our reasons for considering the reigning pathologic conception of the disease too narrow are, in part, derived from the microscopic studies of others and, for the rest, from personal clinical observation. In our case, for example, the impaired articulation and the drooling show that the brain-stem, as well as the cord and peripheral nerves, is involved. Furthermore, the marked disturbance of equilibrium observed by us makes it clear that inhibition of sensory neuronal development is also to be reckoned with. This fact alone proves that the theory of hindered development of peripheral motor neurones and muscle-tissue does not cover the whole pathology of the disease. We feel that it may be that the impaired equilibration is due to the absence of Clarke's columns, and we would urge future investigators to keep this interesting point prominently in mind.

As to prognosis, the reported cases show that the mortality is rather high—about 30%—and that pneumonia is the commonest cause of death. Our case may be classed among the most favorable, but even here complete restitutio ad integram seems to us out of the question, when we consider that the pathology embraces atrophy and disappearance[1] of anterior horn cells and peripheral nerves.

Treatment consists, in the main, in the administration of tonics—we found codliver oil and calcium lactate most serviceable—massage and electricity. Among other important therapeutic measures, warm sea-bathing, generous diet, open-air life and simple coordinative exercises should be mentioned. On general principles, artificial support of the atonic muscles by apparatus should be avoided.

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THE SUSPICION OF MALIGNANCY.*

BY HOWARD LILIENTHAL, M.D., NEW YORK,

Attending Surgeon to Mt. Sinai and Bellevue Hospitals.

NEXT to hemorrhage there is probably no abnormal phenomenon which is to the patient himself more disquieting than the appearance of a tumor. Even with a brave though foolish attempt to disregard the unwelcome presence, and by ignoring to drive it away, there is still the almost subconscious dread that after all we may be facing that ominous, that malignant thing which we know and fear as cancer.

What comes next will depend upon the temperament of the patient; and the human soul is ever individual and never duplicate.

In general, people may be classified as timid or courageous. Yet when confronted with this dreadful spectre of malignancy it is not always the coward who shrinks from the scalpel nor the brave man who seeks the prompt aid of the surgeon. Indeed, the timid are often the first in very panic to seek operative relief, while I have known at least one noble-spirited man, who, with the full understanding of what delay would mean, put off for a year the operation which might have saved him, so that his wife, herself the victim of fatal cancer, should be spared the knowledge of her husband's peril.

The average individual, alarmed at discovering a tumor, will lose little time in consulting his doctor; and often enough his future will hang upon the tactful and conscientious quali-

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ties of this first adviser. And the task of the physician here is no easy one. Should the case prove at a glance to be free from suspicion, his words will bring comfort and gratitude, the good news in some way reflecting upon the physician just as if he were in a manner responsible. But when warning of possible evil must be given then indeed is demanded the utmost delicacy in the management and direction of that complex and contrary force, the mind of man. Too often it is proved that "The bearer of ill news hath but a losing office," and the well-meant efforts of the honest practitioner are repaid with charges of brutality or, even worse, commercialism. Possibly ths patient will seek another and more favorable opinion at the establishment of some one whose code of ethics will not forbid his keeping the sufferer in a fool's paradise until the opportunity for cure is past. The temptation to temporize is therefore great, and when there is nothing more than the mere suspicion of malignancy it is easy to give a placebo and to request the patient to return in a week or in a month, so as to lessen the psychic shock. But that patient may gradually become, as it were, accustomed to his disease, strange as it may seem, and his suspicion having been partly lulled, his second visit may be put off until certainty has taken its place—and with that certainty of diagnosis comes the greater doubt of cure.

But suppose a case is one of those obscure ones in which the diagnosis can be hoped for only after repeated careful examinations. Here, instead of making a tentative diagnosis, the patient should be told frankly that further observation will be required and that he must have patience.

There is perhaps no greater mark of the scientific clinician than the method and completeness of the physical examination. And nothing so educates the physician as the oft repeated and careful inspection, palpation, auscultation, percussion, with the noting of change in the progress or retrogression of the disease.

You have all heard this over and over again — yet how often are the more troublesome examinations put off until the appearance of some danger signal which cannot be disregarded.

Take, for example, that most frequently neglected procedure, the digital examination of the rectum. There is hardly a surgeon who has not had thrust upon him the sad duty of announcing the presence of inoperable rectal cancer, and all because in a case of obscure diarrhea no one made this simple exploration until it was too late. And yet, in any irregularity of the bowels, rectal palpation should be one of the first diagnostic steps instead of the last, the proctoscope supplementing the negative finding of the finger. And the youth of the patient is by no means a scientific reason for ruling out malignancy in this region.

Within the past year I have seen in my practice two fatal cases of inoperable rectal carcinoma in young women under twenty years of age! And these patients could almost certainly have been saved had the disease been earlier recognized, for the cancers of the rectum are of comparatively low malignancy.

The discovery of one morbid condition which ever so completely explains the symptoms of a disease does not mean that we are to neglect further inquiry. This appears to be self-evident, yet the following case will demonstrate how easily one may err.

CASE. A young man about 35 years old came to me with a painful nodular and movable mass the size of a small adult fist, in the right mid-abdomen. There had been deterioration in health for some months, but there were no symptoms referable to disorder of the digestive tract. The growth seemed one which could be easily removed and I referred him to my service in Mt. Sinai Hospital. Simply as a matter of routine, the gloved finger was inserted into the rectum, when at once a non-obstructing though obviously malignant tumor of great size and totally inoperable was discovered, the abdominal mass being evidently secondary.

The presence of hemorrhoids does not signify that the rectum higher up is healthy, yet I have seen—we all have seen—patients who have been actually operated upon for the cure of hemorrhoids when the cause of their distress was a rectal carcinoma, perhaps not at the time of operation within finger reach.

A woman with rectal hemorrhages from a papillomatous colitis, which later necessitated a complete colectomy, had been operated upon for hemorrhoids, which in truth may have been present, and the actual source of the bleeding was not discovered until it became evident that no relief had followed the clamp and cautery.

In disease of the urinary system the matter of thorough and what may be termed "special" examination is of great moment. In a case of sudden hematuria in an individual of middle age the suspicion of malignancy is to be confirmed or eliminated, not as a last but as a first step.

I will assume that most practitioners are able to do their own ordinary microscopy. Also, that they know how to employ the two-glass test, and by catheterization and lavage to decide whether the probable bleeding is from the kidney, the bladder or the urethra—in the male or the female.

A more accurate diagnosis may not be possible, however, without what are called "special" examinations—with the aid of the cystoscope, the x-ray, the ureter catheter. And here permit me to mention a point which I have emphasized on other occasions. The x-ray should take precedence of what may be called the operative procedures of cystoscopy and ureteral catheterization because it is less liable to do harm. In the male, and the aged male in particular, the mere passing of an instrument for the first time may have consequences of a serious

nature due to traumatism and infection—possibilities which can never be absolutely ignored. I have seen dangerous hemorrhage follow cystoscopy in a man with prostatic disease and so-called "hemorrhoids of the bladder," while fatal "catheter chill" is not unknown even in these days of improved urinary antisepsis. If unfortunately the x-ray examination must be repeated, at any rate we shall have avoided one unnecessary cystoscopy. But in any case, these examinations should be made as soon as possible after the suspicious hemorrhage and there must be no placebo or "expectant treatment." If there is indeed a carcinoma, temporary drug relief from symptoms will be the worst thing that could happen, for it will quiet the patient and meantime permit further development of the tumor.

As every progressive practitioner knows, a patient in whom cancer is even dimly suspected should be seen by a surgeon. There can be little loss of prestige and there will surely be great relief of mind on the part of the physician, if even thus early, he will divide his responsibility. Perhaps too often he shares the feeling of his patient that the surgeon's motto is "When in doubt, operate"; yet this motto is on the whole a very safe one when dealing with cancer—always provided that no legitimate means of diagnosis has been omitted.

But the experienced surgeon appreciates the actual risk probably better than any one else, for upon him falls heaviest the blame for an untoward result. And the punishment for failure is far greater in proportion than any reward of success, for when the surgeon unfortunately loses his patient he too often loses the confidence of what may be called the entire "Circle" about that patient and also the physician who referred the case. And a so-called operative recovery with the disease unrelieved is like the mistake of an architect—always in evidence as a reproach to his poor judgment or lack of skill.

In advanced cancer particularly, the mature surgeon has learned to shun operative pyrotechnics, preferring always to relieve the distress rather than to risk all in a desperate attempt at radical cure.

Take, for example, the operative treatment for cancer which closes up the pyloric end or outlet of the stomach. The work naturally divides itself into two portions. First, the formation of a new opening between stomach and intestines—the gastro-enterostomy—which short circuits the diseased parts, permitting the food to pass unobstructed into the intestines, and second, the extirpation of the cancerous part of the stomach. When we are fortunate enough to deal with an early case and a small tumor, both these operations can safely be performed at one sitting. But when infection and ulceration are added to the cancer and there is a large inflammatory mass around the pylorus, the patient weak from starvation, it is not the cancer poisons which are killing him, but the lack of nutrition. Now, after a short and comparatively safe operation, the patient can eat again, and in two or three weeks he will be a good "safe risk" for further surgery. When the abdomen is opened for the second time the tumor will have diminished wonderfully in size and can be removed with infinitely greater ease and safety than would have been possible at first.

This two-stage method has given me great satisfaction and I am morally sure that I have saved patients who would have died under the more brilliant single stage procedure.

What has just been said of dangerous and unpromising operations upon patients who are in any event doomed, does not mean that half-hearted work should be done when there is a chance for radical cure—even though life is thus put in great jeopardy. Take the latest field to be conquered in thoracic surgery, in which the first battle was won by Franz Torek of New York, on March 14, 1913, when he successfully removed a cancer of the esophagus through the chest wall. This most formidable piece of work would not have been justified had there been secondary deposits in other parts of the body. Relief, not an attempt at cure, would then have been the proper aim of the surgeon. But when he was able to remove the entire growth and rid the patient once and for all of that cancer, the extent of the operation and even its great mutilation were not worth considering.

Before this audience it is hardly necessary to emphasize this aspect of the cancer fight. You surely know, for example, the remarkable improvement which has followed the adoption of the present operation for carcinoma of the breast. How hopeful is the outlook even in most malignant forms of the disease when a complete operation is performed early.

As an instance I may briefly mention the case of Mrs. M., a woman 38 years old, who found a nodule the size of a large bean in the outer upper part of her left mammary gland. The important point was that she was sure that there had been nothing there only a few weeks before. Her physician referred her to me, and in general anesthesia the little tumor was widely excised and at once examined. It proved to be carcinoma. So without interrupting narcosis the entire breast was amputated, with its underlying muscles and the glands in the armpit—an operation which twenty years ago would have seemed out of all proportion to a focus of such apparently insignificant size. But this patient, and many others treated in the same manner, has been permanently relieved of a condition surely fatal if left to itself.

It is generally conceded by the medical profession that cancer begins, through infection or otherwise, in one small part of the body; but there comes a time, sooner or later, when it invades other tissues or organs, either in the immediate neighborhood of the parent tumor, or even at a distance, until finally the condition of

carcinosis or generalized cancer is established. The usual cause of death is the poisoning of the system by the toxins absorbed from the growths. Surgeons are well agreed that if a primary or parent cancer is totally removed by an operation it will not recur, though of course we know of nothing to prevent the appearance of an entirely new tumor. Now all cancers are malignant and progressive, though some grow much faster than others, so it is perfectly plain that the sooner after its appearance a cancer is extirpated the better will be the chance of permanent cure.

In view of the still deplorable procrastination which we note in most of these cases, a delay which more than the disease itself brings reproach upon the surgeon, where it does not belong, instead of on the patient, where it does, it occurred to me to go over the cases in my private practice to learn how much time elapsed after the first suspicion of malignancy before surgical aid was sought.

Realizing that public information—I will not say education—has become much more general in recent years, I examined the last 2000 histories in my case books and learned some interesting things.

1. There were 86 cases of malignancy, or 4.3%. At this point I became interested to learn the percentage of malignancy among the class of individuals who would naturally drift to the public wards of hospitals. So I made investigations with the kind permission of the superintendents of five large hospitals in New York. In each institution the diagnosis on discharge was made the object of inquiry, and I learned that in 2000 consecutive surgical ward patients there had been:—

In Mount Sinai Hospital, 84 cases of malignancy, or 4.2%.

In St. Luke's Hospital, 82 cases of malignancy, or 4.1%.

In Presbyterian Hospital (in 2345 cases in 1912 including 400 private patients), 127 cases of malignancy, or 5.4%.

(And in the last 1084 cases in the new indexing system, there were 121 cases of malignancy, or 11.16%.)

In Roosevelt Hospital (2000 patients), 129 cases of malignancy, or 6.45%.

In New York Hospital (2000 patients), 34 cases of malignancy, or 1.7%.

An astonishingly small percentage, perhaps accounted for by the fact that this hospital has a very large ambulance service—so that many of the 2000 cases were of insignificant injuries.

Now, counting all these groups of approximately 2000 cases together we have in 12,345 patients, 542 instances of cancer, or 4.39%, which means that one in every 22 surgical patients had cancer.

2. Of my own 86 patients, 65 had never been operated upon and may be called new cases. The others came on account of secondary or recurrent disease and need not here be considered.

3. Of the 65, 10 were sarcomata, 55 carcinomata.

4. Of the 65, 35 were in men, 30 in women.

But the most interesting fact from the surgeon's viewpoint was the answer to my original inquiry, concerning the promptness or tardiness of the surgical consultation.

5. I found that after the first discovery of a tumor, or after the first suspicious symptoms, the men had waited on the average 12.2 months before consulting the surgeon, the women 11.9 months, a difference of but nine days. Evidently the sexes are after all pretty evenly divided in regard to wisdom, or rather the lack of it, for no person of good sense could describe as wise the delay of a year in a matter so vitally important.

Now we know that very few persons discover or suspect the presence of cancer until the symptoms are very pronounced, or until there is a tumor of considerable size; also that such a tumor, with or without symptoms, has probably been in existence for say six months before it was discovered. So that we may assume that cancer patients do not come to the operating table until at least a year and a half after the onset of the malignant disease.

Precious time thrown away; great dangerous operations to be undergone instead of minor ones.

Surely with such a handicap the wonder is that science and skill have been able to make the steady headway which has been shown in the last twenty years of surgery.

Whatever may be the discoveries of the future, there is no excuse for failure to grasp at once the hope held out by the present.

CORYNEBACTERIUM HODGKINI IN LYMPHATIC LEUKEMIA AND HODGKIN'S DISEASE.

BY ALBERT E. STEELE, M.D., BOSTON,

Assistant in Clinical Bacteriology, Massachusetts General Hospital; Instructor in Bacteriology, Harvard Medical School.

From the Pathological Laboratory, Massachusetts General Hospital, Dr. James Homer Wright, Director.

NEGRI and Mieremet[1] recently announced the cultivation of a bacillus from two cases of "Malignant Granuloma." They cultivated this organism from the lymph nodes and spleen of the first case (post-mortem) and from the cervical lymph nodes of the second case. The bacillus was also found in the sediment of the spleen pulp which had been treated with antiformine as well as in stained sections of the spleen.

They made extensive cultural and animal experiments and think that this bacillus may be the cause of the disease.

Bunting and Yates[2] observed the same bacillus in cultures of the lymph nodes from seven cases of Hodgkin's Disease; they designate it "Corynebacterium Hodgkini" and claim to have produced in a monkey "progressive enlargement of a single group of lymph nodes which at the time of writing show histological changes identical with those seen in the lymph nodes of human beings where the disease is of the same duration."

Billings and Rosenow[3] isolated the bacillus from the lymph nodes of 12 cases of Hodgkin's disease; they have suggested that vaccines may be of value in the treatment of the disease.

Cultures were recently taken from the lymph nodes of two cases at the Massachusetts General Hospital. The first case was one of lymphatic leukemia and the second case, one of Hodgkin's disease. The bacilli isolated from both of these cases were morphologically and culturally identical. They were also apparently identical with the bacilli described by the authors above mentioned.

CASE 1 was a boy of twelve years who entered the east medical service of the Massachusetts General Hospital, in charge of Dr. D. L. Edsall, on Nov. 1, 1913.

When three years of age, he had had measles; but was otherwise well until two years ago. At that time some of the teeth in his left lower jaw were filled; this was followed by toothache and swelling of the lymph nodes. The teeth were then removed, the swelling and pain disappeared and he was well until three weeks before his entrance to the hospital.

He then noticed a painless swelling in both sides of his neck; and, a week later, an enlargement in both axillae; he also had pain in his left upper abdomen.

He attended school but was sent home by the school physician. He was then seen in consultation by Dr. H. F. Vickery, who advised his removal to the Massachusetts General Hospital.

On entrance, his physical examination was negative except for the enlarged lymph nodes, tonsils and spleen. Below both ears was a mass of glands about the size of an egg, with numerous smaller, firm, discreet glands lower in the neck; palpable glands were present in both axillae and groins. None of the glands were tender. Both tonsils were enlarged and their crypts contained pus. The spleen was enlarged to percussion and easily felt 3 cm. below the costal margin.

Blood examination at this time showed 5,286,000 red blood cells and 65,800 white blood cells per cubic millimeter. There was 75% hemoglobin. The white blood cells were 80% lymphocytes and 20% polynuclears. Blood platelets were rare.

On November 3, an x-ray showed a mediastinal mass which was thought to be enlarged glands.

On November 5, the patient's tonsils and adenoids were removed to relieve difficulty in breathing and to remove the pus foci.

On November 6, the white blood count was 220,000; 99% lymphocytes and 1% polynuclears.

On November 7, the white count was only 1,800; 55% polynuclears and 42% lymphocytes. Coincident with this drop in the white blood cell count, there was a marked diminution in the size of the spleen which could not be felt below the costal margin and a diminution in the size of the lymph nodes from the size of an egg to that of a bean. The blood platelets at this time were estimated as being normal in number.

About November 20, the lymph nodes again increased in size, the spleen became palpable and the white blood count was raised to 9,000. The differential count remained practically the same, however, until November 28, when the white cells were 236,000 per cu. mm., 80% of which were lymphocytes and 20% polynuclears. The spleen could now be felt 5 cm. below the costal margin.

On November 28, one of the right inguinal lymph nodes was removed, ground in a sterile mortar and planted on various media.

Eleven tubes were inoculated; seven of these showed a growth of the bacilli described below, after five days' incubation.

A vaccine was prepared as soon as possible; 50 million bacilli were inoculated on December 6 and 50 million on December 10.

The patient's condition did not improve; he became gradually weaker; the spleen, liver and lymph nodes increased in size; the white cell count rose to 298,000—99% lymphocytes and 1% polynuclears—and the platelets were diminished.

He died of weakness and of adenoid hemorrhage on December 12.

CASE 2 was a woman, 30 years of age. She had typhoid fever seven years ago but with this exception has always been well.

The present illness dates from March, 1913, when she noticed a small glandular swelling in the left side of her neck. A few days after she observed this swelling, she noticed other glands in her left axilla and in her right neck.

For three weeks before entrance, she noticed that these glands were growing rapidly larger; that she was short of breath and weak. For these reasons she was admitted to the east surgical service of the Massachusetts General Hospital on Nov. 26, 1913.

The patient was a well-developed, rather emaciated woman. She had a mass of glands, the size of a lemon in her left neck; a mass of the same size in her right neck.

There were numerous discreet glands above the right clavicle. And a glandular mass about the size of an orange in the right axilla. Enlarged glands were also present in her left axilla and in both groins. Her physical examination was otherwise negative. Her blood examinations were as follows:

November 26, white blood cell count 8,400.

December 1, red blood cell count 3,552,000; white blood cell count 7,680.

A stained specimen showed the following: Polymorphonuclears, 86%; lymphocytes, large, 7%; lymphocytes, small, 3%; lymphocytes, transitional, 3%; unidentified, 1%.

Glands were removed from the patient on December 6 for pathological examination and on December 10 for culture.

A diphtheroid bacillus, similar to the one observed in the preceding case, was obtained in pure culture in four tubes; six others were inoculated but showed no growth.

The patient was discharged from the hospital shortly after the cultures were taken and she has not returned as advised. Her subsequent history is not known at present.

BIOLOGY OF THE ORGANISM.

The bacteria cultivated are markedly pleomorphic. Most of the organisms resemble forms of the diphtheria bacillus; but some are short and coccoid. I have not observed any definite branching forms.

Some take the stain uniformly, others show a granular character while still others take the stain more deeply at the ends. They stain by Gram's method, are not acid-fast and are resistant to antiformin.

They grow at first slowly, growth being first visible after five days' incubation. Transplants grow well on most of the ordinary culture media, but best in media rich in body albumen.

On agar and blood serum, the lemon yellow fluorescence observed by Negri and Mieremet, is particularly noticeable. On potato, the growth appears as small isolated lemon-yellow colonies. The growth in bouillon or ascites bouillon, is at first in adherent masses although later the bouillon is somewhat clouded. It grows as isolated yellow colonies in gelatine, without liquefaction. It does not produce gas in glucose or lactose.

SUMMARY.

A diphtheroid bacillus, similar in its morphological and cultural characteristics to the organism described by Negri and Mieremet, Bunting and Yates, and Billings and Rosenow has been cultivated from the lymph nodes of a case of lymphatic leukemia, and one of Hodgkin's disease.

Its relationship to these diseases has not been definitely determined, although further studies on this subject are in progress.

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THE CONDITION OF THE VASO-MOTOR CENTER IN PNEUMONIA.

BY W. T. PORTER, M.D., BOSTON,

AND

L. H. NEWBURGH, M.D., BOSTON.

From the Laboratory of Comparative Physiology, Harvard Medical School.

SINCE 1889[1], it has been generally believed that the vaso-motor centre is exhausted in "pneumonia." The most important carrier of impulses to this centre is the depressor nerve. The average fall of blood pressure, produced by the stimulation of the depressor nerve in normal animals is a measure of the normal state of the vaso-motor apparatus. The sciatic nerve also contains important fibers afferent to the vaso-motor centre and the rise of blood pressure produced on stimulating the central end of the sciatic nerve is also an index of the condition of the vaso-motor centre.

The present investigation consists in the production of lobar pneumonia (acute pneumonitis) in cats and in the comparison of the changes in blood pressure obtained by stimulating the depressor and the sciatic nerve in animals near death from this disease with the changes obtained by the stimulation of these nerves in normal animals.

We have produced pneumonia in cats* by blowing into the trachea cultures of pneumococcus mixed with carborundum powder.

The details will be found in a paper to be published in the *American Journal of Physiology*.

A few hours before death the stimulation of the depressor fibers in the vagus nerve gave a fall of blood pressure equal to the average normal fall, and stimulation of the pressor fibers in the sciatic nerve gave a normal rise of blood pressure.

Following is a typical protocol for a depressor experiment:—

Experiment Dec. 16, 1913. At 10 a. m. a cat weighing 1750 grams was etherized and ten cubic centimeters of a twenty-four hour culture of pneumococcus, grown in glucose bouillon, was injected through the glottis and the trachea into a bronchus. At 4 p. m. the rectal temperature was 38° C., and the cat was apparently well.

Dec. 17, 10 a. m., temperature was 38° C., and the cat seemed well. Under ether 10 cubic centimeters of a twenty-four hour glucose bouillon culture of the pneumococcus, plus one gram powdered carborundum, was injected into a bronchus. At 4.30 p. m. the temperature was 40° C.; the cat was listless and moderately ill.

Dec. 18, 10 a. m. Temperature, 40°C., condition about the same, breathing labored and rapid. 4.30 p. m., temperature 39° C. Animal seems a little better.

Dec. 19, 9 a. m. Temperature, 39° C. 4.30 p. m., temperature 39° C., animal weak and ill. Five cubic centimeters of a twenty-four hour glucose bouillon culture pneumococcus injected through the trachea.

Dec. 20, 9.15 a. m. Temperature 38° C., condition unchanged. Under ether the left carotid artery was connected to a membrane manometer, both vagi were cut and the central end of the left vagus was stimulated with induction currents perceptible when the electrodes were placed on the operator's tongue. The blood pressure fell from 100 mm. Hg. to 65 mm. The absolute fall was 35 mm., and the percentile fall 35%. At 5 p. m. the cat was killed.

Autopsy: The lower lobes and the lower halves of the middle lobes on both sides were voluminous, firm, leathery, dull red-gray in color. They sank in water. On section the surface was gray-red, granular, dry. The remainder of the lung was pale, soft, crepitant and floated in water.

* So far as we are aware this is the first time acute lobar pneumonitis has been produced in cats.

In the experiment of Jan. 2, 1914, in a cat with complete consolidation of the right lower lobe of the lung the temperature was 41 degrees C., the stimulation of the central end of the left sciatic nerve caused the blood pressure to rise from 55 m.m. to 125 m.m. Hg; an absolute rise of 70 m.m.

The vaso-motor reflexes obtained from the depressor and the sciatic nerve were equal to the reflex in normal animals.

The evidence is conclusive that, in animals near death from pneumonia, the vaso-motor apparatus is not measurably impaired.

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A STUDY OF CANCER.

BY SEELYE W. LITTLE, M.D., ROCHESTER, N. Y.

(*Continued from page 80.*)

To revert again to the skin. In considering wounds we must remember several facts in this connection. The epidermis is itself protective; it is composed of one of the few kinds of cells which can reproduce, and most important of all it is of all tissues the one that keeps alive physiologically the longest. Witness the growth of hair and nails after death. Now put this with that other well known fact about cancer, its chief occurrence after the period of growth and development and largely in organs which have served their purpose, such as breast and uterus, and we can see why skin cancer is rarer than we should expect with wounds alone in view. For skin can repair itself and is physiologically active generally until death of the organism and even after.

6. The stomach. The commonest single seat of cancer. Next to the skin it is the worst treated organ in the body and increasingly so as civilization advances. It is quite likely that with alcohol, spices, indigestible food, hot and cold food and the like, we cause minute wounds of the gastric mucous membrane daily, and especially do we injure the narrow alternately dilating and contracting channel, the pylorus, through which all these must pass.

Now for two conceivable ways in which a wound may derange a cell or a group of cells so as to start them towards a riotous and destructive growth. A group of epithelial cells is injured. At once a process of repair begins. If the cells are not too badly injured they can again become perfect and resume their functions. If so badly damaged that complete repair is impossible, they may imperfectly resume function. If more damaged, they may live, but so crippled as to be unable to do their work at all, but still alive and ready for mischief. Or, more probably, in the process of repair and the manufacture of scar tissue some perfectly good uninjured neighboring cells are so shut in and enclosed as to be unable to functionate in the normal way; but they, too, are very much alive. In fact, not functionating but lying dormant, as it were, they are not physiologically dying at all after a lapse of several years when their hard-working fellows are dying. Now comes the relative failure of their patron ductless gland. And by the way, this failure may be only relative to these shut-in cells. That is, the failure may be just in the right proportion for all the other physiologically failing cells, but not for these idlers who have not worked for years. Their accustomed fare is shut off; there is still plenty, but not "what they have been accustomed to." They deteriorate, but they thrive over their fellows because they are physiologically younger. At a certain point in deterioration they are at the stage where the elementary functions return and they can reproduce their kind, which is now a poor imitation of their once highly specialized selves, and they do reproduce.

Again, the same possible degeneration may result purely as an effect of repeated slight injury over a long time, the injured cells then falling far behind their fellows physiologically from overwork. In this case we must assume that these cells are physiologically much older than their fellows, and though the ductless gland is failing *pari passu* with all other body cells, yet for these overworked cells there is actually an over secretion of the patron ductless gland with resultant actual stimulation of the deteriorated cells to their youthful function of reproduction.

Of these two possibilities, the former seems much more probable.

If all this is true, the question at once arises, why is not cancer almost universal after middle life? My explanation of this is at the base of all that follows as to cause and treatment. And incidentally it also answers why is not childhood, the time of bumps and bruises, also the time of cancer?

It is a truism that as soon as a man ceases growing and developing he begins dying. If, within bounds, you injure a growing cell, it goes right on growing again, perhaps even better than before. In fact it is apt to be a hardier cell for having fought against and conquered enemies. The gardener prunes unmercifully to get a hardier and more perfect growth. But after growth has ceased or after the limit of growth has been attained, pruning not only does no good, but it destroys what has already been accomplished. Now injury to a child's cells within reason does no particular harm, for it is the child's main object in life to grow and to perfect what is already there. We all know clinically how quickly children rebound after a severe illness. But after growth has ceased, cell injury of even slight character may easily be a serious matter because irreparable.

Facts learned in recent years have a very important bearing on this matter. We know now that certain organs in the body, formerly of no known use, are really and literally of vital importance, for they have to do with growth, and without them growth is imperfect or indeed impossible. Such organs are the pineal body, the pituitary body, the thymus, the thyroid, the adrenals, the generative organs, etc.

The next important link is the fact that all organs do not die physiologically at the same time. The thymus and the thyroid, for example. Next comes another well known fact, *i.e.* organs that theoretically and naturally ought to die at the same time do not do so. A man may have hard arteries at forty instead of at seventy, with the brain still at the forty-year stage. This in general seems to me to explain very many of the diseases due to civilized life as opposed to natural life. And I believe it explains cancer.

That is, ductless glands and the cells where cancer starts are not in physiological harmony. This might happen in many ways; perhaps as already explained.

This theory of cancer is at variance with no known facts about cancer and certainly explains very satisfactorily most of those facts. Even if, as seems improbable, cancer should be proven of parasitic origin, it is easily possible that the parasite might work not directly to cause cell growth, but indirectly by weakening either the cells or the ductless glands involved, or both. If cancer is proven to be of chemical origin, the same holds true.

This theory explains the general incidence of cancer at and after middle life, its increasing virulence the younger the patient, its attacking only highly specialized cells, its etiological relation, frequent if not invariable, to trauma, its highly probable non-existent contagiousness except auto-contagiousness (what we call recurrence), its rare though possible "spontaneous" cure, the only known positive cure, early exterpation, its cachexia (due to the simpler cells getting the bulk of the food, the absorption of waste products from the same cells, and most important of all, the necessary faulty metabolism of the whole system), the known incidence of the disease proportionately in the various organs, as shown in table 3, the increasing incidence of cancer as the complexity of civilization increases, and many other facts of lesser importance. But the thing can occur only by proper combination of injury, specialized cells shut in for a long time and relative failure of the essential ductless gland for the given case.

Before discussing possible curative measures on the basis of this theory and giving the clinical results of some of these possibilities already tried, another matter of the highest importance should be considered, because it certainly has a bearing on the subject. I refer to lime metabolism and sugar metabolism, their relation to the ductless glands, to various disease processes and to each other. This matter has in recent years received much attention and many important facts have been discovered. Our idea of one disease at least, diabetes, has thereby been revolutionized and the ductless glands have been found to have an unexpectedly large part in this metabolism. Because of the large clinical experience of diabetes sugar metabolism has been the more studied and much more is known of it than of lime metabolism. It is now known positively, for example, that, besides diabetes, such widely differing clinical entities as the following have an important relation to sugar metabolism: cretinism, acromegaly, giantism, Graves' disease, Addison's disease, myxedema, and cancer, to say nothing of eczema, psoriasis, rheumatism gout, and a host of minor ailments. It is astonishing to find that the classical puncture at the base of the brain fails to produce glycosuria if the suprarenals are lacking, that a hypodermic dose of a few milligrams of adrenalin always produces in normals a temporary glycosuria which may not reappear at subsequent injections, that if the thyroid is removed, adrenalin fails to produce glycosuria, but that, on the other hand, if the parathyroids are removed the glycosuria effect of an adrenalin injection is greatly increased; that in some diseases it is almost impossible to produce glycosuria, that in some diseases there is a craving for sugar which, though satisfied, does not produce glycosuria; that in others there is no craving for sweets at all; that in some there is excess of sugar in the blood without glycosuria. It is very suggestive to find, for example, that diabetes and cancer occur in the same individual at the same time with the greatest rarity, that psoriasis is a very common predecessor of cancer, and that in cancer there is often, perhaps always, a hyperglycemia, though very rarely a glycosuria. It is interesting to know that in giantism, for example, where calcium metabolism must be enormous, and in acromegaly, where the same is true, diabetes is common at certain stages, but on the contrary when the active disease has ceased and there is actually a hypo instead of a hyper pituitarism, the sugar tolerance is very high and diabetes is almost an impossibility. Again, in the disorders of pregnancy, it is suggestive that sugar and lime seem to have intimate relations. Teeth often decay at this time, glycosuria is not uncommon, the administration of lime certainly has some influence on the prevention or control of eclampsia, and incidentally remember that in pregnancy both the thyroid and the pituitary are commonly hypertrophied. In this connection recall also the not uncommon myxedematous condition of hands, feet and face without kidney lesions and without true edema, and recall how after labor this enlargement of face and extremities usually subsides.

Such are some of the remarkable facts with reference to calcium and sugar metabolism. They are introduced merely to show how important this subject is and to show that in all probability there is certainly a derangement of sugar

metabolism in cancer, that this is an important element in cancer and that it is an element generally, if not always, associated with disordered function of one or more ductless glands; that calcium metabolism and sugar metabolism are intimately related and doubtless so in cancer where we know positively the sugar metabolism is.

Granted that this general theory of cancer is at least a reasonable one and points in the right direction, the question at once arises, "Are we any nearer a cure for cancer?" I think we are decidedly. In medicine theory is of ultimate use only as it helps restore sick people to health. The man with cancer cares not at all about theories, systems, serums, germs, or anything else unless he can recover. Therefore some of us have been treating cancer on the basis of the theory of cause already outlined. We had first to become more definite. We had to decide in a given case which ductless gland or glands were at fault and whether it was a fault of hyper or hypo secretion or a secretion correct in amount but faulty in composition.

For obvious reasons only inoperable cases were selected, and I will say at the outset of the clinical discussion that very astounding results were apparent in every case in a few weeks, so much so that the three or four medical men who were interested were sure that, whatever the ultimate result, we were on the track of something of the first importance in medicine.

The pituitary gland was first considered because of the known fact of its great importance normally in the matter of growth. We proceeded on the theory that this gland in cancer was hypersecreting at a time of life when it should be failing along with general bodily failure, and that certain cells long idle, because shut in by scar tissue, as already described, were not in the same degree of physiological dying as their fellows and therefore were activated by the hyperpituitarism. But these idle cells could not respond as they should to such stimulation in a normal fashion, being shut in as it were. Therefore we presumed they did only what they could. Now a cell can really do only a few things in the last analysis: it can eat, pass off waste matter, move, grow, secrete something, and finally, most important of all and really most essential for all life, it can reproduce its kind. Specialized cells, certainly in their old age, do not reproduce their kind; that function they have delegated, in humans, to other specialized cells. But if a specialized cell is prevented from doing its special work for a long time, it loses that power. Furthermore, if it is alive and well fed it will certainly do something. We assumed that such cells are the focus for cancer. That is, they are healthy but physiologically deteriorated cells which are comparatively young, and which receive an extra stimulus from the hyperpituitarism. They, therefore, do the only thing left for them to do. They reproduce their kind, atypical to be sure, but characteristic. And being, relatively to the other body cells, young, they are active out of all proportion to other cells. In other words, we have a cancer.

On this assumption, the rational thing would seem to be to remove some of the pituitary body. But for a patient far advanced in cancer, such a procedure was negatived. The risk was too great. It then occurred to me that the pituitary gland is an organ which certainly has two very remarkable and apparently widely separated functions: it regulates growth and it helps regulate sugar metabolism. I decided to make it work overtime at the sugar metabolism, hoping that so much of its energy would thus be occupied that it could not devote much to its growth function. I was encouraged to this opinion by the known fact that cancer and diabetes are extremely rare in the same patient. Therefore I decided to feed the first patient with inoperable cancer I had with large amounts of sugar. The result was so extraordinary that it was with difficulty I could think of anything else, for this patient apparently entirely recovered within two months. Fortunately or unfortunately, the fact that I had no scientific proof that the case really was cancer prevented me from at once rushing into print. Clinically, however, the woman was dying from uterine cancer. Her case is Case 1 described later. But I did enlist the help of some of my fellows and told them my theory and the result. We then tried the thing out with four other patients, one cancer of stomach, one cancer of esophagus, one cancer of skin and one cancer of tongue. There is no scientific doubt at all as to the nature of these cases. The stomach case died in the usual way, the esophagus case died with a metastasis in lung, the tongue case and skin case are under treatment.

All four cases promptly showed three remarkable results. All had a feeling of well-being, three even gained in weight, all were relieved of pain and in all the growth diminished in size. This is surely enough to show that something new was being done and was tremendously encouraging. The results in the esophagus case and in the stomach case only served to start fresh studies which at once opened wide fields. In passing it seems probable that at least one new disease entity has been recognized and many otherwise puzzling cases have been more or less cleared up.

At this point the writer made a careful tabulation of various known facts with reference to the ductless glands. These tabulations appear elsewhere. As a result, the theory was changed. It seemed highly probable that in each case of cancer, depending on its embryological location, a special ductless gland was chiefly involved. For example, the pituitary body is embryologically ectoderm and the stomach is endoderm, and it seemed more likely that if any ductless gland were at fault in cancer of the stomach it would be a gland of endodermic origin, *i.e.* thymus, thyroid, parathyroid, islands of Langerhans or the gastric and intestinal mucosa.

Again, it was enlightening to find that one or more of the ductless glands derived from each of the three germ layers had something to do with sugar metabolism. (See Table 6.) It was still further enlightening to find that always, so far as we could determine, in cancer there is hyperglycemia, but, as already stated, rarely glycosuria. And it seemed almost impossible to produce an alimentary glycosuria.

Another of the tables shows how hyperglycemia may be produced. (Table 7.) It will be seen that in the case of some of the ductless glands, as the suprarenals, for example, hyperaction produces an excess of sugar in the blood, while in the cases of others, the pituitary for example, hypo action does the same thing.

Taking all things into consideration it was believed finally that it must be a case of hypo action of one or more of the ductless glands that was the ultimate causative factor in cancer, as explained earlier in this discussion; either this or a disordered action,—what Cushing in speaking of the pituitary body calls dyspituitarism. The explanation on this hypothesis would be again that the disordered action would affect most strongly the physiologically younger cells, the shut-in idle cells before mentioned.

With this idea, I began on the skin case, which under the sugar treatment had improved to a certain point and then the growth began vigorously in a new spot adjoining the old growth. In considering what gland was at fault, we find on consulting Table 1 that skin is of ectodermic origin. Table 2 shows that the following ductless glands are also of ectodermic origin: A part of the suprarenal, the pituitary, the carotid bodies, the pineal body and possibly the coccygeal body. The last three were ruled out because we knew little about them, but that little does not bear on the present subject. The suprarenal we rule out because hypo adrenalism does not result in hyperglycemia and does result in a well known disease entity—Addison's disease. There remains the pituitary. If the pituitary is at fault in such a case we can rule out hyperpituitarism for its results we know—acromegaly, or in the young, giantism. Therefore we are brought to the theory of hypopituitarism.

The suprarenal was strongly considered at first on the ground that if one omits the actual growth, many of the symptoms of cancer and of Addison's disease are alike: weakness, digestive disturbances, wasting, cachexia, etc. In fact we administered adrenalin, but without much effect one way or another. Again, as a side issue, it may be stated that for reasons not necessary to discuss in this place, adrenalin medication is disappointing, but we have under consideration some interesting possibilities in this connection. Also there seems a fairly definite symptom complex, the exact antithesis of Addison's disease, of which the writer has complete records of two cases. There are certainly many such cases.

So finally on Aug. 26 we began the administration of pituitrin, meanwhile keeping up the sugar administration until Oct. 1, when it was discontinued for reasons to be given presently.

On Oct. 1 there was found to be a very remarkable change in the growth We had not seen the patient since the pituitrin had been started but now we found the growth shrunken to a shadow of its former size, and the whole ulcerated surface healing. (Full details of this case will be given later with the other cases.) But we found the patient had been losing weight and strength while his cancer was disappearing. Several explanations of this were considered. We thought it might be due to too much sugar now that we were furnishing extra pituitrin to the patient, or that it might be due to toxins absorbed from the disappearing growth. At all events we stopped the sugar, urged a generous diet otherwise and gave strychnine. The urine at this time showed the characteristic increase due to the pituitrin. On analysis we found the urine to be of sp. gr. 1.012, acid, possibly a very faint trace of albumin, no sugar.

The tongue case (No. 6), doing badly after the usual initial gain, was next reconsidered.

On consulting Table 1 we find the tongue to be of endodermic origin. Table 2 shows the ductless glands of endodermic origin to be the thymus, the thyroid, the islands of Langerhans, the gastric and intestinal mucosa.

The thymus was ruled out as it is generally negligible after puberty. The thyroid was ruled out (although it was tried for a short time) because we knew the usual effects of hyper- and hypothyroidism in Graves' disease, myxedema and cretinism. The islands of Langerhans were ruled out, at least so far as hyper function is concerned for reasons already given. Hypo-function we know is the usually accepted cause of diabetes. There is very strong ground, however, for seriously considering relative hypofunction of the islands of Langerhans as one of the factors in producing cancer of endodermic tissues. If there is such hypo-function we expect diabetes; but suppose in a given individual there exists a nest of our assumed "idler" cells. When as the first result of hyposecretion of the islands of Langerhans an excess of sugar appears in the blood, that is exactly what suits these physiologically younger and more active cells which from disuse have lost their specialized functions and have deteriorated. They eagerly seize upon this extra food and thrive upon it; if at the proper stage of retrogressive development they multiply and the cancer is started; as the failure in the islands of Langerhans increases and the amount of sugar in the blood thereby increases, the cancer naturally grows, taking all the sugar that can be furnished because the increase is gradual. Therefore a person at or after middle life who has hypo-secretion of the islands of Langerhans will have diabetes or cancer, depending upon whether or not he has the other factors of cancer present. It is curious to note that many more children have diabetes than have cancer, but that very many

more people at or after middle life have cancer than have diabetes. The reason is obvious if our theory is correct.

Therefore hypo-secretion of the islands of Langerhans must be seriously considered in the case of endodermic cancer. A reliable preparation from these organs has not yet been obtained to use in any cancer case as yet.

(To be continued.)

Clinical Department.

MEASLES: ITS RELATION TO ORAL CONDITIONS; WITH A CLINICAL REPORT OF SIX CASES.*

BY H. C. HOYE, D.M.D., BELMONT, MASS.,

Assistant at St. Vincent's Orphan Asylum Clinic, Boston, Massachusetts.

MEASLES is an acute, contagious, febrile disorder, characterized by catarrhal symptoms affecting the upper respiratory tract, and an eruption of dusky-red, slightly elevated macules. It is the most contagious of the various exanthematous affections and it is almost impossible to prevent its spread in an institution or household. Susceptibility to measles is pratically universal. It may attack anyone who is not already immunized by a previous attack.

The eruption of measles may be seen on the mucous membrane of the mouth previous to its appearance on the cutaneous surfaces. The eruption occurs usually on the second day. Flindt[1] in 1880 describes the exanthem of measles as follows: "The eruption consists of round or somewhat irregularly shaped, light red spots, rather indistinctly circumscribed, and only just raised above the mucous surface. The spots vary in size from a pinhead to a lentil, are in part isolated and in part collected into groups, quite irregular in shape, and in some places coalescent. At the centre of the small red spots, and giving them a peculiar appearance, are situated numbers of tiny, whitish, shiny, raised points, apparently vesicular in character and irregularly grouped according to the arrangement of the spots on which they lie. Similar spots can also be perceived on the mucous membrane of the cheeks."

One of the most remarkable and instructive epidemics of measles is that which visited the Faroe Islands in 1846. The island had been free from measles since 1781, a term of sixty-five years. The disease was introduced by a Danish cabinet maker, infected in Copenhagen. He communicated it to two friends. This gave rise to an epidemic which in a short time attacked 6000 people out of a population of 7782. Persons of all ages were stricken, the old inhabitants who had passed through an attack as children in 1781 alone escaped. Not one of the older inhabitants, who was exposed to this infection and was unprotected by previous attack, failed to acquire the disease.

The extreme contagiousness of measles, as shown in the preceding paragraph, is proof of its microparasitic origin. In 1892 Canon found in fourteen cases a bacillus, which he considered to be a specific causative agent. It could be grown on bouillon but on no other medium. Czajkowski[2] found a bacillus in the blood and mucous secretions of fifty cases of measles, which was apparently identical with that discovered by Canon. It grew, however, on various albuminous media. Josias[3] failed to find it in twenty-four cases; Barbier in twenty-one cases.

In 1900 Lesage[4] published the results of a study of two hundred cases. He found a delicate micrococcus, which grew best on gelose, took stains slowly, and was decolorized by Gram's method. The cultures bore resemblance to the Fraenkel's pneumococcus. Rabbits were inoculated with blood and nasal secretions in many cases, and measles was apparently reproduced in nearly all. The organism was found constantly in measles, but was absent in twenty-five cases of scarlet fever and in forty-five normal children.

More recently Weber[5] has detected bodies in the blood which he regards as protozoa. From the above divergent findings it is evident that further research is necessary before any of the organisms described can be accepted as the specific cause of measles.

It will be found convenient to discuss here the influence of institutional environment upon the mortality rate of measles. It is much more fatal in institutions than in the home and is often called "the scourge of children's institutions." Holt speaks of an epidemic in the Nursery and Child's Hospital in 1892 in New York in which there were 145 cases, with a death-rate of 35%.

In the St. Vincent's Orphan Asylum, Camden Street, Boston, the statistics of the cases of measles for the last six years, compiled by F. A. Keyes,[6], D.M.D., are as follows:—

1907-1908, 24; 1908-1909, 50; 1909-November, 1910, 40; November, 1910-April, 1911, 25; April, 1911-May, 1912, 0; May, 1912-May, 1913, 0; May, 1913-November, 1913, 6.

In April, 1913, a new child, infected with measles, spread the disease to six of the children. Examination of the mouths of these children showed the following conditions:—

CASE 1. Eight years old. Cavity in right inferior six-year molar; right inferior second temporary molar, badly decayed; left inferior first temporary molar, abscessed; right superior second temporary molar, decayed; mouth dirty; fetid breath; throat clear of tonsils; no adenoids present.

* Read at the monthly meeting of the Guild of St. Appolonia, Nov. 13, 1913.

CASE 2. Seven years old. Right superior second temporary molar, decayed to gum-line; right superior temporary cuspid, abscessed; cavity in left superior second temporary molar; left inferior second temporary molar, crown three-fourths gone; left inferior first temporary molar, decayed, with gums red and turgid; inferior right temporary molars, badly decayed; breath fetid; dirty mouth; tonsils present.

CASE 3. Five years old. Inferior right temporary molars, badly decayed; first temporary has an abscess discharging pus; left inferior first temporary molar, badly decayed; cavity in left inferior second temporary molar; superior right temporary molars, two proximal cavities; superior left first temporary molar, cavity in crown; tonsils enlarged; and adenoids present.

CASE 4. Five years old. Proximal cavities in the four anterior superior teeth; inferior left first temporary molar, coronal cavity; teeth covered with green stain; gums red and turgid; tonsils enlarged. This is the child who brought the measles into the institution.

CASE 5. Three years old. Frenum enlarged; superior lateral incisors missing; on right superior central incisor gum has receded and is very red and turgid; on left superior temporary molars, roots are denuded; gums on lower, red and turgid; stomatitis present; this child was discharged from the hospital two weeks before this examination was made.

CASE 6. Eight years old. Superior right second temporary molar, abscessed; inferior left six-year molar, mesial cavity; inferior right temporary molars, decayed; gums red and turgid; mouth in six-year molar region very unhealthy; no tonsils.

It is an interesting fact that many of the children at the institution, whose mouths were in good condition, and who were exposed to the infection, were not attacked by the disease, although they had not been made immune by a previous attack.

From the investigations, as reported above, of research workers in all parts of the world, it is evident that measles is one of the most important of childhood diseases. Dentists should, by careful observation of the cases of measles occuring in their practise, be able to obtain interesting data in regard to the oral conditions found in these cases.

While we know that we have but few cases to report and that no logical conclusions can be drawn from so few, we trust we have aroused a little interest. In addition, we hope that other men, who have the opportunity, will observe the oral conditions found in cases of measles, occurring in their practise and report them.

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Medical Progress.

FOURTH REPORT OF PROGRESS IN ORTHOPEDIC SURGERY.

BY ROBERT B. OSGOOD, M.D., F.A.C.S; ROBERT SOUTTER, M.D., F.A.C.S.; HERMANN BUCHOLZ, M.D., HARRY C. LOW, M.D.

TUBERCULOSIS.

Roentgen Ray Detection of Abscesses in Tuberculosis of the Spine. Roederer and Weil[1] for the last two years have been systematically examining with the Roentgen ray every child suspected of having tuberculosis of the spine. They have been surprised at the large proportion of cases in which shadows of abscesses were found about the vertebral focus. They call attention to the ease with which these abscesses can be detected by radioscopy before they induce any symptoms. These findings also emphasize the necessity for prolonged supervision, after an apparent healing of a vertebral process. They consider that with the present technic it is impossible to distinguish by radioscopy between incipient and florid abscesses or the cicatricial changes left after the healing of an abscess.

In America attention has been called to these facts and the ease with which abscesses in Pott's disease may be detected by radioscopic examination, by Compton Reily[2] of Baltimore.

Multiple Bony Tuberculous Lesions in Children. Calve[3] has made a valuable statistical study of the occurrence and prognosis of multiple tuberculous bony lesions in children. In various groups of cases collected by Dr. Glacys and from the records of the Hôpital Maritime at Berck the percentage of multiple lesions has varied from 9.4%, to 13%. In 1910 at Berck there were 85 cases of multiple foci among a total of 869 cases, making 9.8%. Of these 85 multiple cases, 27 were hip disease, 14 being double coxitis. In 9 hip and spine were involved. Thirty-four cases showing multiple lesions were apparently primary in the spine, and of these only five showed more than one vertebral focus, the more common association in this group being with the hip and knee. Tuberculous meningitis occurred about four times as frequently (5.9% to 1.45%) in the multiple cases as in the single. Among the 85 cases having multiple foci there were 8 deaths, 9.5%, while among the 784 cases having single foci there were 21 deaths, or 2.5%. The prognosis, therefore, would seem to be unquestionably more serious in the multiple than in the single cases.

Tuberculin. Delitala,[4] after a considerable experience with the use of tuberculin as a diagnostic agent, believes most strongly in the value of this focalizing reaction. He considers it of special usefulness in the early stages when diag-

nosis is most difficult, from both clinical and radiographic examination. He reports in detail 38 cases. His initial dose is 2-10 mg., his second 5-10, his third 1 mg., and his fourth 5 mg. He allows two days to elapse between each dose, and does not consider rises of temperature of two or three-tenths of a degree as a positive sign.

Treatment of Surgical Tuberculosis. Iselin[5] has treated 800 cases of surgical tuberculosis with the Roentgen rays. He believes that some of the cases in which even amputation had been considered, have been cured. In certain patients with multiple foci only those foci exposed to the rays were cured. There was frequently noted an increase of weight as well. He considers that the rays often do not have sufficient penetration to overcome the density of the bone and that the danger of interfering with the epiphyseal growth and the sensibility of the skin present real limitations to the method. By careful technic it is possible to avoid immediate skin irritation, but as yet he thinks we cannot always avoid late ulcerations, their onset being delayed occasionally for years. This method of therapy he believes to be of less value than the exposure to direct sunlight in high altitudes, but he considers its value lies in its more general applicability.

Schede,[6] working in Lange's clinic, also writes favorably of Roentgen ray therapy in bone and joint tuberculosis. He believes only small "doses" should be employed, since the tubercular tissue reacts much more than the skin or healthy tissue. Cases with sinuses have shown the best reaction, and he has noted no interference with epiphyseal growth. A healthy epiphysis should, however, always be protected. He believes that the method should be combined with general hygienic treatment and orthopedic methods. A damaged skin, cold abscesses, fungus growths threatening perforation, are contraindications to the use of the Roentgen rays.

Bardenheuer[7] reports 40 cases of peripheral tuberculosis treated by heliotherapy at a high altitude. Of these 40 he considered the severity of the disease to be slight in 10, moderate in 11, and great in 19. Of these 19 serious cases, 10 were over twenty years of age, and 13 had "a splendid result." Seven of them he considers completely cured. He believes there may be an exacerbation of the disease in cooler weather. Altitude seems to be of much importance because of the greater therapeutic value of the sun's rays.

Baetzner[8] writes enthusiastically of the trypsin treatment of surgical tuberculosis. After much trial he has adopted the preparation of Fairchild Brothers and Foster, "Injectio Trypsini," which he finds satisfactory as to sterility, and both active and stable. Using himself as a control, he has experienced no ill effects. When the trypsin has been injected into abscess cavities there has been a marked change in the contents of the sac, the pus becoming at first syrupy and brownish and then like meat juice. In a few cases alarming symptoms have appeared and suggested an acute inflammatory phlegmon with rigor and high temperature. These have disappeared in from 24-28 hours, the swelling going down in from four to six days. The reaction in the great majority of cases has been only a slight smarting pain at the moment of the stab and sometimes a slight rise of temperature. The synovial hygromata, for example, of the flexor and extensor sheaths of the hand with "snow ball crunching" have improved under the injections very rapidly and the function of the tendons has improved also. Bones extensively diseased in children have shown what he considers marked and surprising regenerative changes in the skiagraphs. In abscesses after puncture he injects 1-2 c.c. of the Fairchild preparation diluted with ten parts sterile physiological salt solution. He avoids reddened areas. Two or three injections frequently suffice. In sinuses he injects into the walls of the sinus and into the surrounding parenchyma. In the synovial hygromata he injects into the synovial sheath, starting with 2-10 to 5-10 c.c. and after 3-4 injections using larger doses. In joints he injects directly into the parenchyma 1-2 c.c. of trypsin without the dilution with salt solution, using an ordinary hypodermic syringe. The article is apparently somewhat enthusiastic, although the author seems quite convinced that in trypsin he has a valuable therapeutic agent in surgical tuberculosis.

Sattler[9] has used, not trypsin but concentrated carbolic acid as an injection in "many" cases of surgical tuberculosis. He believes that the cases treated with his carbolic injections improved much more rapidly than those treated by other methods. Multiple foci or cases associated with pulmonary tuberculosis do not show a satisfactory reaction. He injects directly into the lesion at the point of tenderness a few drops, up to 15 minims, of concentrated carbolic acid, and repeats this injection every 2-3 weeks, according to the reaction. Age is no contraindication, although children react more quickly. There is little pain, and healthy tissue does not seem to be damaged. (Just why does not appear.) He says that there are no general symptoms.

(Ed. Note.—We report these forms of treatment without personal knowledge of their efficiency or safety. We have had slight experience with the use of the "injectio trypsini" of Fairchild and Foster in an out-patient clinic in the treatment of persistent sinuses. This slight experience has been favorable and leads us to continue. There seems, moreover, to be a growing tendency among many clinicians to seek again for antiseptics in the treatment of infections, and these reports are the most suggestive which have come to our notice in this connection.)

Robert Jones's[10] conclusions are always of great value from the fullness of his experience

and the keenness of his observation. In a recent article dealing with tuberculous disease of the bones and joints, he mentions the diagnostic aids and the principles of treatment upon which he relies. As to diagnosis, assuming that the vague history and insidious onset are characteristic, the next factor upon which he depends is the temperature. A subnormal morning temperature of 97.5 F. or less, with an evening temperature of 99, he considers to be practically pathognomonic of tuberculosis. A higher temperature, of 100° or more, suggests either a septic infection pure and simple or complicated with a tuberculous lesion. If the evening temperature is not high enough to suggest a septic infection and the morning temperature is not subnormal, then the case is probably the result of trauma and represents simply a contusion of the joint. The principles of treatment upon which he relies are, first, complete physiological rest; second, good nourishing food, especial importance being attached to butter, "drippings," jam, and sugar, with an unlimited allowance of good milk; third, fresh air; fourth, sunshine. Mr. Jones thinks that experience does not indicate the truth of the theory that by a certain amount of use the patient may give himself immunizing doses of his own tuberculin. He does not consider that the use of tuberculin is usually necessary for recovery, at least in children, and if this treatment is undertaken he calls attention to the fact that it is more often bovine than human. In adolescents the systematic use of tuberculin ought to be of great advantage, but the problems of administration and the indications for its use are not simple.

Pirie,[11] writing on the reformation of bone after resection, discusses tuberculous osteomyelitis. He states that it is not common, occurring 50 times in 8800 x-ray cases. The diagnosis can, in his opinion, be almost certainly made from the x-ray alone. The skiagrams of his two cases would be considered by many to be suggestive of a chronic pyogenic osteomyelitis, one of three months' duration with a periostitis, and the other following a sprained ankle a year previously. He resected four to five inches of the shaft in each case, and no microscopical examination or inoculation tests are noted. The more recent case regenerated in five weeks, while the second case required two years to restore the bone shaft. He is apparently in accord with Macewen's views as to regeneration of bone, and advises the careful preservation of the periosteum as "a limiting membrane" in the formation of new bone of normal shape. If the laying down of a new bone of proper size is unduly slow, he advises a fracture of the slender shaft as a stimulus to new bone formation.

(Ed. Note.—We have seen proved tuberculous osteomyelitis of the shafts of the long bones very, very rarely. Of its existence there seems to be little doubt, but the question has been properly raised as to whether these cases do not more commonly represent a mixed infection of pyogenic organisms with tubercle bacilli, this mixed infection favoring the more diffuse nature of the lesions.)

Wheeler[12] also advises resection in tuberculous disease of the lower end of the femur between the lower epiphysis and the shaft. He saws across the bone two or three inches above the metaphyseal line, and twisting the lower piece of bone free, wrenches it from the epiphysis. The periosteum previously separated is sewn together. The x-rays show good regeneration.

Brandes[13] reports on the end results of radical operation for tuberculosis of the knee. His material is obtained from the cases operated upon by Helferich in the Surgical University Clinic in Kiel from 1899 to 1907. Twenty-six children were operated upon. In 19 a resection was done, in 4 an arthrectomy, in four an amputation. Three of the resections had later flexion contractures. Fourteen other cases of resection examined had firm osteal ankylosis in a useful position of extension and the patients are able to work and earn their living.

Osgood[14] has reported 28 cases of excision of the knee performed by various orthopedic surgeons at the Massachusetts General Hospital from 1907 to 1912. In 14 of the cases either no sutures, absorbable sutures, or wire sutures were used to maintain apposition of the bone ends. Of these there were 3 subsequent amputations, and in 12 union was delayed three months or more. In 14 either malleable iron bone plates or aluminum wire bone clamps devised by Goddu were used, and in these there was only one subsequent amputation in a very unfavorable case treated afterwards outside the hospital. Firm union occurred in two months or less in 10, and every case except the amputated one finally obtained firm union. The plates or clamps were subsequently removed because of irritation in four cases, without further trouble. The belief is expressed that some method of obtaining accurate and firm apposition of the bone ends immediately following the excision is most desirable, and that if this is accomplished postoperative pain is less, firm union more quickly takes place, and a useful limb is almost always obtained.

Cases of tuberculous rheumatism, so-called, continue to be reported by Poncet,[15] Popper,[15] and Griffith.[17] We could wish for more convincing proof of the tuberculous nature of these arthritides, but there seems to be no doubt as to the frequent association of what seems to be a toxic polyarthritis with lesions of the lungs, glands, and bone, known to be of a tuberculous nature. Moreover, in substantiation of the claim that these arthritides are caused by the toxines elaborated in the tuberculous lesion, is the fact that increase in the joint symptoms follows small injections of tuberculin. Poncet advises operative treatment in the cases of "inflammatory" tuberculosis in which ankylosis

has occurred, declaring that resection with early mobilization gives brilliant results.

(Ed. Note.—To a limited extent this advice of Poncet may be wise in lesions of the elbow and possibly of the shoulder and wrist, but the experience of most men who have devoted attention to arthroplastic operations emphasizes the peculiarly unfavorable nature of old tubercular joints for these mobilizing operations. An exacerbation of the disease frequently takes place and the results by and large have not thus far been satisfactory.)

POLIOMYELITIS, SPASTIC PARAPLEGIA, AND OBSTETRICAL PARALYSIS.

Poliomyelitis. Colliver,[18] after a study of 16 cases in the recent Los Angeles epidemic, calls attention to "a peculiar twitching, tremulous, or convulsive movement" of certain groups of muscles, lasting from a few seconds to nearly a minute. It is greater than a tremor, and not so long as a convulsion. It occurs in the preparalytic stage. The face, the limbs, or the whole body may be affected. It occurs at intervals of about an hour, and being of very short duration is easily overlooked. There may be also a peculiar "hydrocephalic" cry.

(Ed. Note.—This early prodromal sign has frequently been observed in monkeys and has been one of the methods by which the onset of a paralysis could be predicted. It frequently is of longer duration and of more frequent occurrence in monkeys than Colliver has noticed in human beings.)

Müller[19] agrees with the findings of Lucas that in the early stages of an infection with the virus of poliomyelitis there is an increase in the quantity of spinal fluid, with moderate lymphocytosis and increase in the albumen. The fluid is, however, sterile to ordinary culture materials. Unless there is a mixed infection he has found in the blood a leucopenia with a relative increase in the lymphocytes and the eosinophiles.

McIntosh and Turnbull[20] have reported four attempts to transmit the virus of poliomyelitis from human beings to monkeys by intradural and intraperitoneal injections. The first two cases were unsuccessful, but in the third and fourth they obtained a typical picture. Historically, their report is of interest in that they state that this is the first work of the kind done in England.

Neustadter,[21] citing the report of Romer of a form of flaccid paralysis occurring in guinea-pigs, reports that two guinea-pigs living in a cage beneath a monkey which was suffering from poliomyelitis and had a nasal discharge, showed typical paralysis. He was able to transmit the disease through the nasal membrane in at least one case, which showed characteristic lesions of the cord and brain.

(Ed. Note.—As far as we are aware, this is the first time in which experimentors have observed a transmission of the experimentally produced disease without definite inoculation. Attempts have repeatedly been made to transmit the disease by contact, by means of mixing the nasal secretion of acutely sick cases with the food of healthy susceptible monkeys, and in various other ways. These attempts have been failures. It is a significant fact also that experimentors have not contracted the disease.)

Brown,[22] in reporting the Los Angeles epidemic, calls attention to the importance of quarantine and isolation hospitals, oiling of the streets, and general municipal attention at the first sign of an epidemic, but the facts only show coincident cases in families and localities. He believes that urotropin is harmless, but of little efficacy.

By far the most important contribution to our knowledge of the virus of poliomyelitis has been the successful cultivation of the organism by Flexner and Noguchi.[23] The culture material is sterile rabbit kidney in a human ascitic fluid covered with a layer of paraffin oil in order to furnish anaerobic conditions of growth. The usual sized portion of sterile rabbit kidney is first placed in the test tube and a fragment of corresponding size containing the virus removed from the cerebrum or other part of the brain or spinal cord is added. Upon these about 15 c.c. of sterile human ascitic fluid is poured, and finally about 4 c.c. of paraffin oil. The ascitic fluid must be originally sterile. Fractional heating or sterilization renders it unsuitable. The tubes are placed in the thermostat. If gross contaminations have been excluded the tubes show a faint opalescence appearing in about five days around the fragments at the bottom of the tube. The opalescence spreads to other portions of the tube in three to five days more. When the growth is well established in this fluid media it may be transplanted onto media made solid by the addition of a 2% nutrient agar, and on this small colonies become evident to the naked eye. Uncontaminated cultures may be stained best by the Giemsa or Gram method. The microorganism consists of globoid bodies measuring from 0.15 to 0.03 of a micron in diameter arranged in pairs, chains, and masses, according to conditions of growth and multiplication. Typical experimental poliomyelitis has been produced in monkeys by the injection of this artificially grown virus.

Spitzy[24] has abandoned the plastic transplantation of the trapezius in paralysis of the deltoid. He considers the operation both difficult and dangerous, and in one of his cases the flat transplanted trapezius became later rounded and slipped forward or backward in every abduction of the shoulder. He has more lately employed the following operation and reports its success in two cases. A transverse osteotomy of the humerus above the insertion of the pectoralis major allows the outward rotation or the lower fragment. The bone is allowed to heal with the arm in the elevated position in a

moulded (plaster of Paris) splint made before the operation. By this manoeuvre the pectoralis is brought under greater tension, which is diminished by elevation. The clavicular portion of the pectoralis takes the place of the deltoid, and although the child cannot lift heavy weights it can elevate the arm in a vertical direction.

Lange and Vulpius have both performed osteotomy of the humerus and outwardly rotated the lower fragment in cases of obstetrical paralysis.

Gallie[25] reports successful results, which he considers permanent, from the operation which he independently devised of retaining paralyzed feet in good weight-bearing position by fastening the paralyzed tendons as stays to the tibia or fibula. After the periosteum is divided by a linear cut a groove is made in the bone, the tendon drawn up to the proper tension and the periosteum sewn over it. A similar method was reported favorably by Codiville in 1900.

Spastic Paralysis. Werndorff,[26] in considering the indications for section of the posterior nerve roots in spastic paralysis believes that the elimination of the contractures represents the first and chief problem in treatment. This he is sure should always be done before Foerster's operation is considered, and he thinks that in most cases this will be sufficient. His conclusions are in agreement with those of Harris,[27] who has made a study of the end results of cases operated upon at the Children's Hospital in Boston. These were the results of tenotomies and myotomies and have been in the main most satisfactory. Foerster[28] himself now pleads for a very careful consideration of the indications before his operation is attempted. First, the pathological condition should be stationary or nearly so; second, sometimes it is a questionable method of interference after the condition has remained stationary for a long period (how long?); third, one must be very sure that the spasticity is not due to tumors, syphilis, or Pott's disease; fourth, the operation is of little value unless there is excellent mentality, since prolonged after-treatment and muscle training is absolutely essential. Foerster believes the operation less applicable to the arms than to the legs.

Obstetrical Paralysis. Lange[29] reports 17 cases of distortion of the shoulder joint and obstetrical palsy. Five of these he considers as real paralysis, twelve of distortion. The clinical pictures are similar. The x-ray showed in no case a dislocation. The main diagnostic sign is the pathognomonic position of the arm and limited function. He believes that the treatment should be carried out under these headings: 1. prophylaxis against contractures. In adults exercises; in children plaster of Paris bed with the arm outwardly rotated, and passive motions instituted. 2. In inveterate cases redressment under an anaesthetic (this up to one year). 3. In old cases (over one year) osteotomy of the humerus at the mid point and outward rotation of the arm.

(To be continued.)

Reports of Societies.

WORCESTER DISTRICT MEDICAL SOCIETY.

MEETING OF DECEMBER 10, 1913.

President, HOMER GAGE, M.D.; Secretary, ERNEST L. HUNT, M.D.

The secretary's report approved without reading. A communication from the Committee on State and National Legislation of the general society was read, and a local committee, consisting of Drs. Emerson, Duggan, Reed and Bragg, was nominated.

DR. WALTER E. BOWERS, in behalf of a committee of which Drs. Knight and Harrower were the other members, presented a memorial to Dr. Edwin Bayard Harvey. *Voted:* To file the memorial in the Year Book, and cause a copy to be sent to Mrs. Harvey.

DR. W. IRVING CLARK presented the report of the Committee on Public Lectures, outlining their plan for a series of lectures to be given on health subjects under the auspices of the society. He requested the advice of the society as to the program, place of meeting, and especially on the advisability of dealing with the sex question.

DR. HOMER GAGE: This matter is one of great personal interest to me. In the past the society as a body has not done as much work for the community as it might have. The questions presented by the committee are important, and I hope they may be decided rightly, and the committee empowered to carry out the plan. The location of the hall is important, and publicity is necessary in order to secure the first audience. I hope the members will express their opinions freely.

DR. T. E. MCEVOY: I doubt the advisability of presenting the last subject mentioned (Community Responsibility for the Prevalence of Venereal Disease). This is a difficult subject upon which to instruct the public, and would better be done in another way.

DR. A. C. GETCHELL: I move that we accept the report of the committee, with the understanding that the society is in favor of the scheme, and that it be referred back to the committee with power to act. Voted.

The president again called for an expression of opinion in regard to the presentation of the sex subjects. No one responding, the president said he thought that silence on the part of the members should be interpreted by the committee as implying doubt.

The president then introduced the speaker of the afternoon, DR. HOWARD LILIENTHAL, of New York City, author of a work on Imperative Surgery, surgeon to Mt. Sinai Hospital, frequent contributor to current medical literature, and announced his subject as

THE SUSPICION OF MALIGNANCY.

The speaker prefaced his paper* by saying that his treatment of the subject would perhaps be in

* See page 120 for paper in full.

more popular vein than strictly scientific, and expressed his hope for a free discussion of his paper. He also mentioned that a society had been recently organized calling itself The American Society for the Control of Cancer, with the object of educating the public on this subject.

DISCUSSION.

DR. HOMER GAGE: We have listened to an extremely interesting and timely paper, coming at a moment when a more determined and organized effort to instruct the public and the profession as to the need of early diagnosis and excision of cancer is under way. At present, all recognize that there is no cure except the knife. While promising work in various other directions is being done, it is yet too early to use any of them as a basis for general treatment. The new statistics of Dr. Lilienthal as to the frequency of cancer are most interesting to my mind, especially the uniformity shown in the figures obtained from different sources. No matter how the groups are subdivided, the general fact remains the same, which is proof to my mind that his figures do not lie. There is another important thing that I would like to add to what Dr. Lilienthal has said. There is a class of cases in which conditions exist which have been called by Bloodgood pre-cancerous. Such are the small ulcers appearing on the lips of elderly people, or small tumors of the breasts as certain cysts, which are prone to become cancer. Often we find in seemingly simple cysts little papillary projections, doubtless early manifestations of malignancy. This subject is urged upon the attention of all by the new association. I know that Dr. Lilienthal likes argument and hopes for a free discussion of his paper, which I am sure he will enjoy as we will profit by it.

DR. RAY GREENE: I recall how Dr. Lilienthal in undergraduate days disagreed with Dr. Fitz over a piece of liver. I have recently had several cases of sarcoma, which I treated with Coley's fluid, and had some correspondence with Dr. Lilienthal regarding that treatment. I would like to know his present opinion of that treatment.

DR. W. E. BOWERS: There always comes up in the mind of the surgeon the question of the necessity of a mutilating operation in early cases. Do not the fascia planes act as a dam to the progress of malignancy? Is there not a chance to do less severe operations if the cases are seen early? Many of us have seen these early cancers, in which the diagnosis has been proven by microscopic examination, removed by less extensive operation, fail of recurrence. This may be playing with fire. Will Dr. Lilienthal speak about that? We want him to feel that we are alive to this opportunity to learn of so high an authority.

DR. A. C. GETCHELL: The question of the frequency of malignant growths in adult women of apparently good health interests me. My opinion was recently asked by the librarian of our public library on a book by Brooks Adams called The Health Master. In the chapter on cancer the health master talks to a woman's club of sixty from the ages of thirty to sixty-five, telling them that eight of the number had cancer. The book states that some of the number looked queer, and in a few months eight had been operated on for cancer. While the author in his book has presented some true conditions, there are others which I know are not true. Is the proportion which he states correct?

DR. L. C. MILLER: What are we going to do with the patients whom we suspect to have cancer, and cannot prove it by ordinary examination? Special diagnostic procedures take time and tend to fasten the patient's attention upon the disease. What shall be our conversation to the patient? Are we to tell them our suspicions? Is it not better to leave them in the dark until we can confirm our diagnosis absolutely?

DR. M. F. FALLON: When I visited Mount Sinai Hospital Dr. Lilienthal was treating cancer cases by means of the x-ray and serums, and I would like his opinion on the value of that kind of treatment. Surgeons deserve great credit in trying to do away with operations. Perhaps one of the most prominent workers in this field is Fischera of Italy. He uses extracts of the human embryo in the treatment of inoperable cancer. No less an authority than Dr. William Mayo gives credence to the results which he has obtained, having been successful in a few cases. The rationale of this treatment is based on Cohnheim's theory of the origin of cancer,—that is, that it is caused by an irritant or injury. If this is true, embryonic cells are stimulated to invade the near-by tissues and run lawlessly. This constitutes cancer. Experiments show that at times extracts of healthy organs injected into healthy animals of the same species will destroy the same organ in that animal. Dr. Mallory has shown that an extract prepared from the scrapings of the stomach of a rabbit injected into another rabbit produces ulcer of the stomach, also solutions of the bile salts destroy the liver in the injected animal. Certain tumors in rats have been made to disappear by the injection of extracts from rat embryos. Fischera bases his work upon such facts as these. If it is true that the growth is due to lawless embryonic cells, then the injection of an extract of an embryo may cause the cessation of the development of the cancer. It is at least interesting to look into the investigations of such men.

DR. LILIENTHAL: I am glad that Dr. Gage spoke strongly of excision, and moderately in reference to other treatments. We have been deluged with such treatments as mesothorium and various serums with no success in the hands of many good men. It is probable that the x-ray, radium and mesothorium will cure superficial cancer by a destructive influence as efficacious as the knife. If I had an epithelium in the corner of my eyelid, I would go for x-ray treatment. But if I had a removable cancer inside of me, I would risk nothing but an operation. As for a precancerous stage, everyone who is ever going to have cancer is in a pre-cancerous stage. I should rather use the term a suspicious condition where one has a tumor that might develop into cancer. Do not temporize with chronic mastitis. I advise the removal of the entire mammary gland, without the muscles or lymphatics. Tell the patient she will lose the nipple. She will be satisfied when told that it is not cancer and never will be.

In reply to Dr. Bowers' question, when there is real cancer in the substance of the breast or connected with it, the best results are obtained with the more formidable operation; remove everything. This has been my uniform practice, and I have never regretted it. Some surgeons are satisfied to remove the fascia over the pectoralis major, but cancer is more apt to stand under the pectoralis minor. It is probably true that too much skin has

been sacrificed, a deep cancer being less apt to recur in the skin than anywhere else. Save enough to close the wound easily. This does not apply to large ulcerating growths.

To Dr. Greene's question in regard to Coley's fluid, I have some delicacy in mentioning it before the New York Society, and can never arouse a discussion. When I present patients who appear to have been cured, nobody says a word. When I ask why, they respond that a committee has investigated and decided that as many sarcomata get well without Coley's fluid as after its use. I was responsible for the postoperative use of Coley's fluid. I have a case operated on twelve years ago supposed to be a cyst of the chest wall involving the ribs, probably tubercular. At operation found it to be apparently sarcoma, and had a large piece out of the pleura before I knew it. The cut-end of the ribs had some of the growth in them. It is impossible to remove it completely. I gave an extremely guarded prognosis. Pathologist reported pigmented cell sarcoma. I gave Coley's fluid, and the tumor of the cicatrix disappeared. One year after an enlargement appeared. Again gave Coley's with again complete disappearance. I have presented this man three times before the New York Medical Society. In another case I removed part of the superior maxilla. Could not remove it all as the disease was so extensive. Closed it up, yet there was a hump on the left side of the nose remaining. In answer to the patient's inquiry, I said, "Oh, it is nothing. I will later clear it off." Gave Coley's fluid, and in a few weeks the tumor disappeared. Face assumed a natural appearance. This was a year ago. A week ago still appeared well. Pathologist's original report was malignant osteosarcoma. Now, he says, there were giant cells in it, and another pathologist also found them. Most giant celled sarcoma of the epulis type are nonmalignant. Such experience, however, makes me want to use Coley's fluid after every case. If I am doing wrong, my intentions are good.

Dr. Getchell's inquiry,—As to the frequency of cancer in ordinary adult women, I do not understand such a statement as he quoted from the Health Master. It seems as if they must have been cases of carcinophobia. Many people have moles, etc., which it is well enough to remove by operation. I do not believe any such number had cancer.

Dr. Miller,—As to what to tell the patient. I believe a patient suspected of cancer should have the benefit of every kind of examination. If the stomach, tell her that ulcer is very common, and that you want to find out if she has one. Tell another member of the family your real suspicion. One ought not to quiet the patient's mind until his own mind is quieted.

To Dr. Fallon,—I have tried the method of injecting patients with emulsions from the whole cancer, in the hope that it would act as a vaccine. I have had but eight cases. One had a recurrence. The others are not heard from. There is no doubt in my mind that some cases of cancer are cured without cutting. Whether it is a germ disease or not, it is certainly a disease of chemistry. The new born and embryos do not have sarcoma, though they may have other tumors. As the investigators do not know what part of the embryo prevents it, it was therefore rational to use the whole embryo. The thymus has been suggested as the preventive force, because it atrophies in later life. Rhodenberg has had cures with the thymus, both in extract and in feeding the whole gland.

A professional friend of mine brought his mother to me for cancer of the breast. I did a complete operation. Two years after it recurred, forming a tumor of the chest mall, a hard, red, elevated nodule about the size of a filbert. The patient had said nothing about it. Under local anesthesia I removed all I could, and found it bound down to underlying bone. A microscopic examination showed that this was a carcinoma of the same type as the parent tumor. The son then took the case into his own hands. Dr. Rhodenberg furnished the thymus extract. The wound healed, and the patient is well now, but other cases have not recovered. Dr. Carrel agrees that it is a good and tenable theory. The blood of the infant may have some substance that rejuvenates and prevents the cancer getting hold.

FRANKLIN COUNTY DISTRICT MEDICAL SOCIETY.

The bi-monthly meeting of the society was held in Greenfield, January 13th. A letter was read with reference to a bill now before the legislature regarding the revelation of professional secrets in court on the part of physicians and nurses. The suggestion offered was that the words "not be urged" should be changed to "not be compelled." Dr. G. P. Twitchell of Greenfield read a paper on the Treatment of Gastric Ulcer. The paper was discussed by Drs. H. G. Stetson and Charles F. Canedy of Greenfield and by Dr. Philbrick of Northfield. Dr. Paul W. Goldsbury of Warwick read a paper on Observations on the Sense of Smell, and gave a demonstration.

Book Reviews.

The Treatment of Rheumatic Infections. Press of Parke, Davis and Company.

This monograph is a statement of the case for phylacogen treatment of the so-called rheumatic arthritides.

Forty-Fourth Annual Report of the State Board of Health of Massachusetts. Boston: Wright and Potter Printing Company. 1913.

This volume records the official activities of the Massachusetts Board of Health for the fiscal year ended Nov. 30, 1912. The general report particularly discusses progress made in antityphoid inoculation, in the knowledge and control of poliomyelitis, and ophthalmia neonatorum, and the maintenance of isolation hospitals by cities or towns. Among the recommendations for the new year may be mentioned the need of a central authority to supervise tuberculosis in Massachusetts. The remainder of the volume consists of supplementary special reports on water supply, sewerage, food and drug inspection, cold storage, slaughtering, dairies, plumbing and other works in hygiene, with papers by members of the board, and tabulated statistics.

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THE MASSACHUSETTS BOARD OF HEALTH.

THE inaugural message of Governor Walsh devotes some attention to public health. That part of his message is as follows:—

"There is no more important function in the government than to care for and protect the public health. In the earlier development of the country this truth was not so well recognized; but Massachusetts is entitled to the credit of having led the way among the Commonwealths in the establishment of a State board to safeguard the health of its people. Public health questions in this State were first considered by a commission appointed in 1849, and in 1869 the State Board of Health was created. Down through the intervening years the board has not only led the way in the study of health problems, but has secured the enactment of a body of health laws which have been the model for legislative action in other States.

"Changes in conditions and the great increase in the volume of work of the board would now seem to demand such a reorganization of this department as would place it among the paid boards, with an executive officer armed with authority and charged with the responsibility of supervising the administration of the health laws of the State. With this in view, I recommend the establishment of a salaried Board of Health, with a health commissioner appointed by the board and subject to the approval of the governor. Provision should be made for sufficient salary for the health commissioner to insure the services of a man of training and capacity to fill this important position, probably the most important in the public service of the Commonwealth. The salaries of the members of the board, whose duties would be largely advisory, need be little more than nominal, because the experience of the past demonstrates that men of commanding ability in the study of health problems will give of their time and service to the State."

The praise of Governor Walsh for the Massachusetts Board of Health is richly deserved. The bulletins of this board have been accepted as models not only for other States, but for the United States Public Health Service. Some of the many achievements of the State Board of Health have been the production and the free distribution of diphtheria antitoxin and smallpox vaccine at a time when such a step was regarded as socialistic. Practitioners in the State have never failed to secure a sufficiency of diphtheria antitoxin in an epidemic. The advertisements of anti-diphtheritic sera do not allure the physicians of Massachusetts, because reliable antitoxin is prepared and furnished by the State Board of Health. Recently the Board of Health has prepared and distributed free typhoid vaccine for immunization against typhoid fever, and in its campaign against infantile blindness it has furnished silver nitrate to all practitioners. Among the many investigations of the State Board of Health, there come to mind the classical studies on the filtration of water supplies and the more recent studies which led to the discovery of the insect that may play a part in the transmission of poliomyelitis. These are but a few of the accomplishments of a board that Governor Walsh so justly praises.

The Governor believes, and others share his belief, that the prodigious advances in the nature, causes, prevention and control of disease necessitate a new machinery for the State Board of Health. In his recommendations he has suggested a reorganization somewhat similar to that undertaken in New York, and gives a bare outline in his message. He believes in a single highly-paid commissioner of health, with an advisory board, whose members are to be paid a nominal salary. At present the entire authority is vested in a board the members of which are unpaid. The executive officer is the secretary of the board and derives his authority from the board. All matters of importance are decided by the board, of which the active executive officer is not a member. In his subordinate capacity the secretary may act only as the delegate of the board; he cannot speak with the authority of the official state health department. At times it has happened that difficult problems

have had to await the meeting and action of the board before authoritative action could be taken.

We believe that there is much to be said in favor of the recommendation of Governor Walsh. The details of the suggested reorganization need careful consideration and will be discussed in these columns in the near future. We believe that everything concerning the State Board of Health, its policies, its organization, its personnel, is of vital importance to the medical profession of the State. Before any change from the present machinery of the health force of the State, which has served so long and so creditably, is put into effect, all phases of health administration must be carefully surveyed.

The State Board of Health depends for its usefulness upon the support and coöperation of the rank and file of the medical profession throughout the State. It must in the future, as it has in the past, assume a wise leadership over the physician in matters of public health.

The medical profession, which is the actual exponent of all health activities, should manifest no slight interest in any suggested reorganization of our State Board of Health. It is the privilege and duty of the physicians of Massachusetts to make themselves heard in this important matter.

MEDICAL LEGISLATION. THE PRACTICE OF MEDICINE AND DENTISTRY.

THE State of Massachusetts, whose position on most public questions has always been an advanced one, has been singularly behind some of her sister states in her attitude toward legislation for the regulation of the practice of medicine and dentistry. It is one of the few states at the present time that will license a dentist or a physician who possesses no evidence of having graduated from an institution chartered to grant a diploma for efficiency in either of these two professions. She is one of the small number of states that permits its governor to appoint the boards of registration for the qualification of candidates who must pass the state board examinations before they may practice, thus making these boards under the influence of politics to just the extent that the incumbent of the governor's office is subservient to political influences.

The opposition to legislation looking to the betterment of the practice in dentistry and medicine and the safeguarding of the health interests of the public has come not only from those whose personal and pecuniary interests have been involved, but to a certain extent from those obsessed by the idea that legislation restricting the practice of these professions to those coming up to the prescribed standards of ethical and educational qualifications would be an infringement upon the rights of personal liberty. The bulk of the opposition is, of course, from those who could not meet increased educational requirements and are possessed of no ethical standards.

It is very desirable that this state should emancipate itself from a position so highly unsuited to its record in other matters. State pride ought to operate to accomplish this, even if there were no better reasons. In the issue of the JOURNAL for Jan. 1 (Vol. clxx, p. 24) we commented at length editorially on pending medical legislation relative to the practice of dentistry in Massachusetts. The bill proposed for enactment this year by the Massachusetts Civic League relative to the practice of dentistry is one, which, if passed, will go a long way toward putting the state in a position in accord with her importance as a progressive leader in legislation for the welfare of her citizens. Its passage, practically as it stands, should be favored by every one having at heart the betterment of conditions surrounding the practice of dentistry. The physicians and dentists of all sections of the state should take the trouble to enlighten their senators and representatives with respect to the importance of the enactment of right legislation in this respect, and there would then be no difficulty in getting a proper statute upon the books. This bill does not go as far as it should, in our opinion, in correcting the danger of political domination of appointment to the Board of Registration. It would be better that the governor should be provided with a list of available competent men, selected by the state dental societies, and that from this list he should make the prescribed appointments and fill any vacancies. This is the way the matter is managed in a good many states.

The second section of the bill deals with the matter of what shall constitute an acceptable dental school so far as time spent in study is concerned, and also with rules governing the licensing of graduates of dental schools by the registration board and the procedure to be fol-

lowed when a dentist desires to change his residence and practice to another state.

The third section deals with the penalties attached to practicing without proper licensure or under false colors. It also deals with the question of dental assistants. Last year an effort was made to secure such legislation as was necessary to establish this order of dental assistants. It was defeated by the attitude of the state board toward the measure, as well as by the opposition of those who thought their interests were being jeopardized, or who imagined they saw in the bill a portal of entry for those who, without any adequate training in dentistry, would attach themselves to "dental parlors," and do a poor grade of work. This year's bill has been improved in this respect by abundant safeguarding of those features that doubts were expressed about in last year's Dental Nurse Bills, so that there would now seem to be no excuse for not enacting this very beneficial piece of legislation. In a bill that promises to furnish a better dental law than we at present have, it is extremely desirable that there should be no provision which cannot be enthusiastically supported by a united dental profession. It should not carry any provisions the import of which is not clear, in the hope that it may go through as a rider.

Such attempts would jeopardize the passage of the bill, the main provisions of which outweigh in importance the possible good resulting from the passage of the rider. In the proposed bill the clause referring to the dental assistant is a very important clause, though not given much prominence in the text of the bill. Dental prophylaxis cannot be carried out unless some provision is made whereby both in private practice and in public clinics the necessary attention can be furnished. The modern expansion of the technic of dental and oral surgery takes all the time and skill of the dentist, and some help must be given him to enable him to meet the demands of the prophylactic side of his work, which must otherwise be neglected, to the detriment of the public. It is more feasible to have the grade of skill required for this department of dental work provided by the dental assistant, who should be licensed and, before being licensed, sufficiently trained so that she (or he) may use such instruments and perform such technic in the mouth as is necessary to accomplish the purposes for which they are licensed. Exactly what the dental assistant may be permitted to do should be even more specifically outlined than it is in the present bill, and any evasion of the provision which makes it imperative that their work should be done under the supervision of a registered dentist should be punishable by an immediate revocation of the license. The penalty for improperly engaging in dental practice by such a nurse or assistant would then be at the door of those entrusted with the proper enforcement of the laws governing the practice of the dental profession.

Dental charlatans with a dental degree, obtained without proper qualification, should not be tolerated. No one else would make any improper use of such assistants, and without improper registration of dentists there would be no danger of the establishment of so-called "dental parlors," where work detrimental to the public and the dental profession might be carried on. Therefore provision should be made that these assistants before being registered should prove by practical tests their mastery of the necessary technic. Through her activities dental prophylaxis may not only actually be carried out by those who will come often enough to their dentist to have their teeth properly cleaned, but an educational campaign on the home care of the teeth might be launched.

Section four deals with the revocation of licenses and the redress that may be had by one who considers himself aggrieved in this respect.

Section five imposes fine or imprisonment or both as the penalty for practising without license or employing an unlicensed dentist (not a dental nurse) as an assistant.

A great deal has been said of late apropos of the importance of a clean mouth. The relation of work of this sort to the health of the community, and particularly in regard to the health of school children is receiving much emphasis. There is, however, a tendency to go to extremes in this matter. Too much should not be claimed. The mouth is simply one of the portals of entry for infections detrimental to the human economy. Infections are only one of the sources of human illness. The support which a reasonable presentation of these claims might attract to this bill should not be sacrificed by the exploitation of unsubstantiated theories on the part of those whose horizon is limited by the walls of the buccal cavity. The possibilities of harboring infections and contagious diseases, the causation of many constitutional infections, such as arthritis, nephritis, Riggs' disease, etc., though not

playing a common rôle in the first two instances at least do, without doubt, cause in some cases a disastrous train of sequelae. Of equal importance with the occasional occurrence of the above-mentioned systemic disturbances traceable to the mouth and teeth are the many indefinite and intangible consequences of dental caries whose effects are manifested in digestive disturbances, poor nutrition, and lack of assimilation of food because of faulty mastication. In these ways the maximum of efficiency of individuals may be kept below par to such an extent that they cannot play their full part in the world's work. It would seem that a measure looking to the raising of the standards of efficiency of her citizens should make a strong appeal to the legislators of the state.

It is to be hoped that this year's general court will carefully consider these features of the Dental Bill when it comes before them, and give Massachusetts an act regulating the practice of this profession of which she need not be ashamed.

THE HELPFUL UNFIT

One of the newest and most propitious experiments for the solution of the problem of industrial waste, is the chance afforded feeble or partly disabled or convalescent people in hospitals and asylum workshops to support themselves by doing useful work. Both in this country and abroad there have been successful attempts to find work for people unable, under the present system of production, to gain all they need for a livelihood. The prospect is promising that knowledge will be gained which will mean changes in charity methods sufficient to encourage self-reliance and efficiency in many disheartened workers.

Thus far such experiments have proved the decided money value of such work, done despite obstacles. Supplies worth many thousand were produced the summer past by patients on the hospital farm at the State colony at Gardner, Mass. A pottery established within two years in connection with a hospital on the Pacific Coast has enabled tuberculous girls to pay their expenses under sanatorium treatment and to learn a self-supporting trade. The men admitted to the Otisville Sanatorium of the New York City Health Department are required to do such work in and about the institution as they are fitted and able to do and as is salutary for them; and they are much better off thus occupied. Five patients in an Eastern hospital last year made and sold $6,000 worth of pottery. At the Bedford Sanatorium for consumptives of the Montefiore Home in New York, vegetable gardening is done by the patients, sufficient at least for the needs of that institution. Feeble-minded patients under Dr. Fernald and Dr. Tuttle at the schools and hospitals at Waverley, Mass., under Dr. Laehr at the Hans Schoenow Hospital in Berlin, Germany, and in other places where craft work has been instituted, have made an excellent showing.

In this connection should also be mentioned the work done by Dr. Herbert J. Hall of Marblehead, Mass., in the treatment of patients through systematized work. The accomplishments of this institution in connection with various forms of handicraft are very definite and indicative of the possibilities of such systematized activities wherever the handicapped may congregate.

Such workers are not expected to be trained in this way for success in the more skilled trades; but certainly they can be taught the more simple arts of hand-weaving, metal-working, pottery-making, and cement working. Men and women thrown out of employment in a particular trade because of some special unfitness are by no means of no service at all. The unfeeling should have no right to speak of them as human derelicts, "fit only for the scrap heap." The problem, states the *New York Evening Post,* is to find and organize the sick and discarded workers, teach them work that they can do, and so by grading work to their ability, restore to them their self-respect and their sense of having a recognized place in society. Those who have been studying the experiments under way are predicting a system of labor supplementary to the present system of regular industries which involves so much waste. The burden of supporting the sick and idle will become too heavy, they assert; and then will be devised some general social policy of training the imperfectly fitted people, now often allowed to throw away their lives in sadness and neglect, to use what productive power they have for themselves and the community in which they live.

It should finally be remembered that the work of the physically and even mentally handicapped may often through previous training be of a far finer quality than that of the average so-called well person and that this is an asset to which the state and the community should give due regard.

MEDICAL NOTES.

SMALLPOX ON THE "OHIO."—Report from Washington, D.C., states that there occurred on Jan. 8 the fourth death from smallpox in the epidemic of that disease aboard the battleship *Ohio*.

THE "NEWARK" AS A QUARANTINE VESSEL.—It is announced that the United States second class cruiser *Newark*, now stationed at Guantanamo, Cuba, is to be transferred from the Navy to the Public Health Service, and will be placed at Providence, R. I., to serve as a quarantine vessel.

AN IMPORTANT MEDICAL AFFILIATION.—It is announced in *Science* that the Cleveland (Ohio) City Hospital is to become affiliated with the medical school of Western Reserve University. The sum of $1,000,000 has recently been raised for the further endowment of the school.

"The agreement which will be entered into by the city and the university will provide that all members of the visiting staff of the City Hospital shall be nominated by the trustees of Western Reserve University upon recommendation by the faculty of the school of medicine. The visiting staff will have absolute authority over the professional treatment of all patients of the hospital. The director of public welfare will be the administrative head of the hospital. The university will have all teaching and research privileges."

BRITISH MEDICAL NEW YEAR HONORS.—Relatively few medical names appear this year on the list of New Year honors in England. Sir Christopher Nixon, M.D., a former president of the Royal College of Physicians of Ireland, is made a member of the Irish Privy Council. The only new medical baronetcy is conferred on Dr. Sir Thomas Joseph Stafford, medical commissioner of the local government board in Ireland. Knighthood is conferred on Surgeon-General A. T. Sloggett, R.A.M.C., director of the British Army Medical Service; on Dr. T. B. Nariman, of Bombay, physician to the Parsi Lying-in Hospital in that city; and on Dr. Harry Brookes Allen, professor of pathology and dean of the medical faculty in the University of Melbourne. Sir Rickman Godlee, president of the Royal College of Surgeons of England, is promoted Knight Commander of the Royal Victorian Order.

FRENCH AND SWISS MORTALITY STATISTICS.—The mortality statistics of France for 1911, published this month in Paris, show a total of 775,088 deaths, as against 704,770 in 1910. Of these, 86,113 were caused by tuberculosis, 31,768 by cancer (as against 27,306 from the same cause in 1906), and 29,470 by the epidemic infections. In Paris in 1911 the tuberculosis death-rate was 380 per 100,000, that of Boston in 1910 being 175. It is noted that in 1861 there were but 50 lepers in Paris. There are now about 300 in that city, and 300 more in the rest of France. A commission has been recently appointed by the ministry of the interior to investigate this alarming increase.

In Switzerland the total death-rate has varied little in the past fifteen years. In 1899 it was 25.9 per 1000 in Berne, 21.9 in Basle, and 20.9 in Zurich. In 1907 the rates were 27.7 in Berne, 21.2 in Basle, and 16.8 in Zurich.

BOSTON AND NEW ENGLAND.

BOSTON DISTRICT HOMEOPATHIC MEDICAL SOCIETY.—At the annual meeting of the Boston District Homeopathic Medical Society, held in this city recently, the principal address was by Dr. Stephen H. Blodgett, the retiring president, on "The Press, the Public and the Medical Profession." The officers elected for the coming year are Dr. Orville R. Chadwell, president; Dr. Conrad Wesselhoeft, secretary; and Dr. Edwin W. Smith, treasurer.

COMPARATIVE NEW ENGLAND DEATH-RATES.—The comparative death-rates of five of the New England states in 1913 were as follows: Rhode Island, 15.4 per 1000; Massachusetts, 14.7; New Hampshire, 13.6; Maine, 12.6; and Vermont, 12.2. It will be observed that these rates are approximately proportional to the density of population in the respective states.

BOSTON MILK AND BABY HYGIENE ASSOCIATION.—At the regular January monthly meeting of the Boston Milk and Baby Hygiene Association, statistics were presented showing that during the year 1913 the Association cared for 3421 babies, as against 3021 in 1912, an increase of 13%.

HOSPITAL BEQUESTS.—The will of the late Alfred Jones, who died at Boston on Jan. 8, was

filed on Jan. 13 in the Suffolk probate court. It contains bequests of $1000 each to the New England Hospital for Women and Children, Boston; the Corning (N. Y.) Hospital; and the Women's Medical College, Philadelphia.

NEW YORK.

AMERICAN COLLEGE OF SURGEONS.—The board of regents of the American College of Surgeons held a meeting on Jan. 9 at the Waldorf-Astoria, the purpose of which, in addition to the transaction of routine business, was, as stated by Dr. John B. Murphy of Chicago, to discuss ways and means of advancing interest and opportunity in higher education in surgery, and to take steps for the provision of a home for the college, so that the stimulation of this uplift plan may be more effective over the entire country. At the meeting the names were ratified of 1,000 surgeons who were proposed as fellows of the college at its first meeting at Chicago in November last.

MONEY FOR ORTHOPEDIC DISPENSARY.—At a concert given at the Waldorf-Astoria on Jan. 9 the sum of $5,000 was raised for the New York Orthopedic Dispensary and Hospital.

MORTALITY STATISTICS.—The weekly reports of the Health Department show that the mortality in the city during the month of December represented an annual death-rate of 13.33, as against 12.64 in November and 14.21 in December, 1912. Among the diseases in which there was an augmented fatality were the following: The weekly average of deaths from measles increased from 6.25 in November to 9 in December; the weekly average from scarlet fever, from 4 to 5.25; from diphtheria and croup, from 19.75 to 22.75; from influenza, from 4.25 to 7.25; from acute bronchitis, from 13.75 to 15.25; from pneumonia, from 81.75 to 107; from bronchopneumonia, from 82.25 to 85; from cancer, from 81.25 to 83; from apoplexy and softening of the brain, from 19.75 to 23.25; from organic heart diseases, from 192.5 to 208; from hernia and intestinal obstruction, from 10.25 to 15.25; and from Bright's disease and acute nephritis, from 107.5 to 113.25. Among the diseases in which there was a decrease in mortality were the following: The weekly average of deaths from typhoid fever decreased from 13.25 to 6; from whooping-cough, from 4 to 2.5; from epidemic cerebrospinal meningitis, from 4.25 to 2.75; from pulmonary tuberculosis, from 159.5 to 157.25; from diarrheal diseases under five years, from 41.5 to 31.75; from appendicitis and typhilitis, from 10.25 to 9.75; and from puerperal diseases, from 11.75 to 9.25.

HONORS FOR DR. H. M. BIGGS.—The Board of Health recently adopted resolutions complimentary to Dr. H. M. Biggs, on the occasion of his retirement, and appointed him a member of the Medical Advisory Board, honorary general medical officer of the Department of Health, and medical adviser to the Otisville Tuberculosis Sanatorium.

PHYSICAL EXAMINATION OF CHILDREN.—The Health Department reports that in the appropriation for the division of child hygiene for 1913 was included an item of $10,000, to be expended by the division in extending to the child-caring institutions of the city the same system of physical examination of children as was provided for in the public and parochial schools. There are 63 of these institutions in the different boroughs of the city, and five medical inspectors, under the direction of a chief inspector, were assigned to this duty. From March 29 to Oct. 18, 14,697 children were examined, and of these, 6,486 were found to be normal, and 8,211 suffering from one or more physical defects. In general, the proportion of defects noted is about the same as that found among the children in the schools, an exception being noted in the case of defective teeth; owing, without doubt, to the greater attention paid by the institutions to defects of nature. The percentage of defective teeth among the institution children was 38, as against 49% among the children in the public and parochial schools. In October these children were all re-examined to determine whether the treatment provided had had the desired result, and it was found that 2,730, or 44%, were entirely cured; 1,868, or 30%, were improved; and 1,593, or 25%, remained unimproved. Considering the brief period elapsing between the original examination and the re-examination, the proportion of children cured is regarded as remarkable, and indicative of what may be accomplished in safeguarding the health of children when it is possible to apply direct and prompt attention to their needs.

BOTANICAL GARDEN.—At the annual meeting of the managers of the New York Botanical Garden, Bronx Park, on Jan. 12, Dr. W. Gilman Thompson was elected president, to succeed the late Judge Addison Brown. Among the new managers elected was Dr. Lewis Rutherford Morris, and Dr. W. L. Britton was re-elected secretary. Dr. Britton reported that during the past year $116,395 had been received, bringing the total permanent fund of the corporation up to more than $520,000, and that the committee in charge of the work of collection had been instructed to continue its efforts until the fund had reached $1,000,000. The object of the fund is to permit further expansion of the educational and scientific work of the institution, the increase of its collections, and the additional ornamentation of its grounds.

MEDICAL SOCIETY OF THE BRONX.—The borough of the Bronx having been made one of the counties of the State, a county medical society has now been organized to take the place of the Medical Society of the Borough of the Bronx. Dr. N. B. Van Etten, who was recently president of the latter and who is chairman for the borough of the Bronx in the Medical Association of the Greater City of New York, was elected president of the new society.

FISH CANCER.—Dr. H. H. Gaylord of Buffalo, director of the State Institute for the Study of Malignant Diseases, has just made to Governor Glynn the report of a special study which reveals the fact that fish in the State hatcheries, in common with those in most of the other cultural stations where species of the salmon family, including trout, are kept for breeding purposes, are more or less infected with cancerous disease. He has reached the conclusion that what is known as gill disease or endemic goitre is really a malignant growth, and his investigations have convinced him that the affection is caused by a specific micro-organism. It has been successfully transmitted to dogs and rats, but it would appear that he has never succeeded in transplanting the tumors from one fish to another; nor, in his experience, has the disease ever been transmitted directly from infected to healthy specimens. Certain specimens have been found to possess an almost complete resistance to the disease, while spontaneous recovery occurs in a considerable proportion of cases.

Current Literature

MEDICAL RECORD.

JANUARY 3, 1914.

1. WAGNER, C. *The New York Laryngological Society.*
2. DELAVAN, D. B. *Laryngology in New York.*
3. THACHER, J. S. *Unresolved Pneumonia.*
4. VINCENT, W. G. *Acute Appendicitis in Infancy and Childhood.*
5. DRUECK, C. J. *Genital Fistulae in the Female.*
6. BURROWS, E. C. *Uses and Abuses of Salvarsan and Mercury in Syphilis.*
7. *PRENDERGAST, F. A. *Effect of Typhoid Vaccine on Sugar Output in Diabetes.*
8. LEGIARDI-LAURA, C. *Subpectoral Abscess. Report of a Case.*
9. ROMEO, P. *Refrigeration with Ice in the Treatment of Intercostal Neuralgia.*

7. Prendergast, impressed by the diminution of glycosuria which he had observed in diabetics during the course of typhoid fever, tested the effect of typhoid vaccine in four cases of diabetes, all of which were on a regular hospital diabetic diet when inoculations were begun. His results in two cases were striking, in the other two inconclusive. The number of cases is, of course, too small to draw inferences from, but they suggest an interesting field for further study.

[L. D. C.]

NEW YORK MEDICAL JOURNAL.

JANUARY 3, 1914.

1. FREUDENTHAL, W. *Why Is Nasal Catarrh so Prevalent in the United States?*
2. DAVIS, G. G. *Treatment of Poliomyelitis by Operative Measures.*
3. CLARK, L. P., AND CALDWELL, E. W. *The Sella Turcica in Some Epileptics.*
4. MAYS, T. J. *Alcoholism in Relation to the Heredity of Epilepsy, Consumption, and Other Nervous Diseases.*
5. CUMSTON, C. G. *The Treatment of Traumatic Rupture of the Urethra.*
6. GEYSER, A. C. *Why Electrotherapy Does Not Cure.*
7. SHALET, L. *The Diagnosis of Early Clinical Pulmonary Tuberculosis.*
8. GOODNER, R. A. *Prevention of Insanity.*
9. STEINER, S. *Mixed Chancre.*
10. WISE, F. *Röntgen Rays in Eczema of the Hands.*
11. COLE, R. *Pneumococcus Infection and Lobar Pneumonia.*

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

JANUARY 3, 1914.

1. *CANNON, W. B. *Early Use of the Röntgen Ray in the Study of the Alimentary Canal.*
2. *ROSANOFF, A. J. *A Statistical Study of Prognosis in Insanity.*
3. *MAYER, E. M. *The Intranasal Treatment of Dysmenorrhea, with a Report of Ninety-Three Cases.*
4. SILER, J. F., GARRISON, P. E., AND MACNEAL, W. J. *Pellagra: A Summary of the First Progress Report of the Thompson-McFadden Pellagra Commission.*
5. FOWLER, H. A. *Closed Tuberculous Pyonephrosis.*

6. PIERSON, R. H. *Gastric Ulcer from Overworking the Stomach.*
7. MACFARLAN, D. *Notes in the Study of Potassium Mercuric-Iodid.*
8. DUBOIS, P. L., NEAL, J. B., AND ZINGHER, A. *Experimental Studies in Poliomyelitis.*
9. HOLM, M. L., AND HIMMELBERGER, L. R. *The Quantitative Determination of Albumin in Sputum With Potassium Ferrocyanide.*
10. NICHOLS, J. B. *The Diet in Gastric Ulcer and Hyperchlorhydria.*
11. *BURR, C. W. *The Foreign-Born Insane. A Racial Study of the Patients Admitted to the Insane Department of the Philadelphia General Hospital in Ten Years* (1903-1912).
12. COHEN, S. S., AND SOEPP, R. M. *A Case of Multiple Serositis and Report of Necropsy.*
13. LANDIS, H. R. *Signed Consent to a Necropsy a Condition to Admission to Our Hospital. Ten Years' Experience in the Phipps Institute of Philadelphia.*
14. GUTHRIE, J. B. *Cough-Dilatation Time a Measure of Heart Function.*
15. TEN BROECK, L. L. *A Rapid Method of Isolating Pathogenic Streptococci from Contaminated Fields.*
16. CARMICHAEL, F. A. *Chronic Malignant Degeneration of the Thyroid With Report of a Case.*
17. SIMONS, I. *A Case of Patent Ductus Arteriosus (Botalli). With Report of a New Physical Sign.*
18. FLAGG, P. J. A *Previously Unemphasized Feature in the Construction of Nitrous Oxid-Oxygen Ether Apparatus.*
19. JAMIESON, W. R. *Report of a Case of the Maculotubercular Form of Leprosy.*
20. PRATT, J. P. *Apparatus for Intratracheal Insufflation.*
21. LORENZ, W. F. *A Buret for Intraspinous Medication.*
22. FISK, T. L. *Safeguarding the Ether and Chloroform Bottles.*
23. BASS, C. C. *An Improved Diphtheria Culture Tube.*
24. MACE, L. S. *Apparatus for Artificial Pneumothorax.*
25. PLACE, R. W. *An Improved Ear-Speculum.*
26. MCGRATH, B. F. *A Simple Instrument for Transfusion.*

1. Cannon's article is a very interesting historical review of this subject.

2. Rosanoff finds that death is the typical termination for patients with senile psychoses, general paresis and cerebral arteriosclerosis, discharge from institutions for alcoholic psychoses, psychoses related to dementia praecox and manic depressive psychoses, and continued residence in the institution for dementia praecox and paranoiac conditions. Of those recovering, the average duration of treatment is about ten months. About 20 per cent. of the cases discharged to self or relatives are readmitted within five years.

3. Mayer describes the tuberculum septi and the anterior portion of the inferior turbinate in either side of the nose as "genital spots" and claims from 50 to 75 per cent. of relief from dysmenorrhea of patients treated with applications of trichloracetic acid to these spots. Applications four times at intervals between menstruation are usually sufficient to obtain lasting results.

4. This report finds that the supposition that the ingestion of good or spoiled maize is the essential cause of pellagra is not supported by study of the conditions. Pellagra is in all probability a specific infectious disease communicable from person to person by means at present unknown. No evidence was discovered to incriminate flies of the genus simulium, except their universal distribution throughout the area studied. If it is distributed by a blood-sucking insect, stomoxys calcitrans would appear to be the most probable carrier. The inclination is to regard intimate association in the household and contamination of food with the excretions of pellagrins as possible modes of distribution of the disease.

11. A foreign-born population of 24.7 per cent. in American cities supplies 44 per cent. of the indigent insane. [E. H. R.]

BULLETIN OF THE JOHNS HOPKINS HOSPITAL.

JANUARY, 1914.

1. KLEBS, A. C. *The History of Medicine as a Subject of Teaching and Research.*
2. ROHRER, C. W. G. *John Hunter: His Life and Labors.*

THE LANCET.

DECEMBER 13, 1913.

1. WILSON, S. A. K. *Some Common Errors in the Diagnosis of Nervous Disease.*
2. *FREYER, P. J. *Cancer of the Prostate.*
3. *MORLEY, J. *Jackson's Pericolic Membrane: Its Nature, Clinical Significance and Relation to Abnormal Mobility of the Proximal Colon.*
4. HOWARD, R. A *Method of Removal of Carcinoma of the Prostate (Abdomino-Perineal Complete Prostatectomy).*
5. ROSENOW, E. C., AND COOMBS, C. *The Myocardial Lesions of Rabbits Inoculated with Streptococcus Viridans.*
6. *CLARK, H. *Tuberculosis Statistics: Some Difficulties in the Presentation of Facts Bearing on the Tuberculosis Problem in a Suitable Form for Statistical Purposes.*
7. WOODWARD, H. M. M., AND CLARKE, K. B. *Notes on Three Cases of Glanders.*

2. Freyer discusses the symptoms, physical examinations and treatment of cancer of the prostate. He presents eight cases in detail.

3. Morley discusses the etiology and nature of the pericolic membrane first described by J. N. Jackson in 1908 as "a transparent membrane extending from the parietal peritoneum of the right flank across the front of the ascending colon to its inner side and continuous above with the transverse mesocolon." The membrane, according to Jackson, is not an adhesion in any sense. Morley considers that this membrane is congenital in origin and presents six cases which confirm this view. In each of these cases, one as young as five months and another eight years, the nature of the membrane was the same. In addition, in each one of these cases there was a persistence of the ascending mesocolon with resulting abnormal mobility of the cecum and ascending colon. These points Morley discusses as to their embryological origin and as found in monkeys. Unless this membrane causes symptoms it should not be divided.

6. Clark discusses the difficulties in presenting fair and just statistics in tuberculosis work. The paper is short and hardly suited for review but is none the less of distinct importance to all interested in this subject. Among other interesting points the writer suggests that among sanatorium failures should be classified all those who could not be persuaded to go to the sanatorium at an early stage and only applied when a cure was impossible.

[J. B. H.]

DECEMBER 20, 1913.

1. *MAKINS, G. H. *The Bradshaw Lecture on Gunshot Injuries of the Arteries.*

2. *LANGMEAD, F. *On the Diagnosis, Prognosis and Treatment of Sydenham's Chorea.*
3. *GWATHMEY, J. T. *Oil-Ether Anesthesia.*
4. WARNER, F. *Development of the Pharynx by Muscular Exercises after Operation for Adenoids, with Special Reference to Feeble-Minded Children.*
5. RAINSFORD, F. E. *On a Fatal Case of Pellagra in an Insane Patient.*
6. BRUCE, L. C. *The Use of Vaccines Graduated by Their Opacity.*
7. KERR, W. S. *Cancer of the Tongue and Larynx Removed by Operation.*
8. PAGE, C. M. *The Repair of the Flexor Tendons of the Hand.*
9. SURVEYOR, N. F. *A Case of Rat-Bite Fever Treated by Neosalvarsan.*

1. Cf. *British Med. Journal*, Dec. 20, 1913.

2. This is a good practical discussion of the diagnosis, prognosis and treatment of chorea. Under treatment he discusses diet and medicinal treatment and lays special emphasis on the need of careful supervision when the acute symptoms have subsided.

3. Gwathmey claims the following advantages for oil-ether anesthesia. (1) apprehension is relieved by doing away with an ether cone or mask; (2) no expensive apparatus is required; (3) after-effects are reduced to a minimum; (4) more complete relaxation is secured: (5) the limits of safety are widely extended compared with other methods; (6) a more even plane of surgical anesthesia is anatomically maintained than is possible by the inhalation method. He has demonstrated these preparations in about 100 cases, the ages ranging from 4 to 71 years. He reports in detail on five cases. The method is especially indicated in lung surgery and operations on the head and throat. It is contraindicated in those cases, with the exception of lung cases, in which ether is contraindicated and also in operations on the anus, rectum, etc. He discusses the physiology of this method, which is of great importance to understand clearly. Strength of the ether and oil solution varies from 50% in young children to 75% in adults. One ounce of solution is used for every 20 pounds of body weight. Details of solution, pulmonary medication technic and apparatus are described in the article.

[J. B. H.]

DECEMBER 27, 1913.

1. *WEST, S. *The Purvis Oration on Some Points in the Diagnosis and Treatment of Granular Kidney.*
2. DUNN, P. *Concussion Cataract: Its Medico-Legal Aspect; with Notes of an Unusual Case.*
3. FARRANT, R. *The Relation of the Thyroid to Antitoxin.*

1. West discusses in a clinical way, the subject of granular kidney. His classification of "large white kidney," "contracting white kidney," "contracted white" and "contracted red kidney" seems hardly based on scientific grounds and detracts from the value of the article.

[J. B. H.]

BRITISH MEDICAL JOURNAL.

DECEMBER 13, 1913.

1. MURRAY, G. R. *The Clinical Significance of Spontaneous Hemorrhage as an Early Sign of Disease.*
2. *WILSON, H. W. *The Early Diagnosis and Operative Treatment of Carcinoma of the Cervix.*
3. *MACALISTER, C. J. *The Influence of Venereal Diseases.*
4. STRANGEWAY, T. S. P. *The Work of the Cammidge Research Hospital.*
5. HALL-EDWARDS, J. *The Significance of Phleboliths.*
6. ELWORTHY, H. S. *Appendicectomy in General Practice.*
7. VICKERY, D. H. *Intestinal Obstruction Due to a Case of Worms.*

2. Wilson, discussing carcinoma of the cervix of the uterus, first considers the clinical types of disease and their method of spread. Among the difficulties of early diagnosis he discusses those due to the character of the disease—its painlessness and insidious onset and second those due to the patient. The early symptoms he describes—bleeding on coitus, metrorrhagia, etc., Under operative treatment he describes both radical and palliative operations.

3. Macalister gives a strong address on the influences of venereal diseases, their extent, the harm resulting from them, with suggestions for the future.

[J. B. H.]

DECEMBER 20, 1913.

1. *MAKINS, G. H. *The Bradshaw Lecture on Gunshot Injuries of the Arteries.*
2. *CASTELLAIN, A. *Tyhoid-Paratyphoid Vaccinations with Mixed Vaccines.*
3. MORISON, A. E. *Typhoid Cholecystitis.*
4. STEWART, P. A *Case of Hysterical Monoplegia Following Electric Shock.*
5. MILLS, W. T. *A Case of Gastric Tetany: Recovery.*
6. DICK, M. I., AND RUTHERFORD, W. T. *A Case of the So-called Rat-bite Disease.*

1. Makins discusses first the changes in the shape of bullets which have taken place in recent years and then takes up the anatomical characters of injuries inflicted upon the blood vessels by the small calibre bullet, contusion of the vessel wall, frequency of various classes of wounds, immediate results of injuries, primary hemorrhage, spontaneous healing of arterial wounds, secondary hemorrhage and the development of aneurysms. Under the subject of treatment he considers proximal ligature, simple direct ligature; the effect on permanent lowering of the nutrition of the liver, thrombosis and other accidents. There is a wealth of interesting material in this article.

2. The gist of Castellani's article is that in countries such as Ceylon where paratyphoid is prevalent, a mixed vaccine of typhoid and paratyphoid should be used in prophylaxis.

[J. B. H.]

DECEMBER 27, 1913.

1. GILFORD, H. *On the Nature of Old Age and of Cancer.*
2. *SHIPWAY, F. E. *The Intratracheal Insufflation of Ether.*
3. MACKINLAY, W. H., AND WEEKS, L. M. *A Case of Ruptured Aneurysm of the Descending Aorta.*
4. BUSHBY, T. *A Case of Spontaneous Hemo-pneumothorax.*
5. FRASER, J. B. *Lithopaedion.*

2. Shipway discussing intratracheal insufflation of ether names as the advantages of this method that (1) a free airway is obtained, (2) anesthesia can be kept lighter than by ordinary method; (3) the etherizer is out of the surgeon's way; (4) respiratory movements are very slight, and (5) shock is diminished. Among its disadvantages he cites the following points: (1) The apparatus is costly. (2) It is also cumbersome. (3) The introduction of the catheter is a difficult procedure. [J. B. H.]

THE INDIAN MEDICAL GAZETTE.

DECEMBER, 1913.

1. *CASTELLANI, A. *Typhoid-Paratyphoid Vaccination with Mixed Vaccines.*
2. BARRY, C. C. *A Review of the Treatment of Depressed Fractures of the Skull at the Rangoon General Hospital During the Past Four Years.*
3. STEPHEN, L. P. *Notes on Some Interesting Cases.*
4. HEHIR, P. *Disease Carriers in Our Army in India.*
5. MUNRO, D. *Notes on a Renal Case, with Remarks on the Relief of Renal Pain by Washing Out the Pelvis of the Kidney Through a Urethral Catheter.*
6. KENRICK, W. H. *Malaria and Color.*
7. NEWMAN, E. A. R. *A Note on Two Unusual Cases of Cysts.*
8. WATTS, H. *Fractured Spine; Paraplegia; Laminectomy.*
9. BULLOCH, O. H. *Partial Suppression of Both Upper Extremities.*
10. SINGH, D. *Prostatectomies Performed.*

1. In view of the prevalence of the paratyphoid fevers in the tropics, Castellani advocates the use of a mixed typhoid, paratyphoid A and paratyphoid B vaccine, which in practise he has found harmless and effective. He gives two doses, the first containing 500 million typhoid, and 250 million of each of the paratyphoid bacilli, the second double these amounts.

[R. M. G.]

THE PRACTITIONER.

DECEMBER, 1913.

1. BUZZARD, E. F. *Varieties of Facial Spasm and Their Treatment.*
2. *LOCKYER, C. *Genital Prolapse.*
3. BALL, C. A. *Nephrectomy.*
4. *NABARRO, D. N. *The Principles of Serum and Vaccine Therapy and Their Application to Diseases of Children.*
5. WALKER, C. G. *Fact and Fancy in Cancer Research.*
6. MCDONAGH, J. E. R. *Venereal Diseases as We See Them To-day.*
7. MACLEOD, J. M. H. *Recent Advances in Dermatology.*
8. NORBURY, L. E. C. *Imperforate Conditions of the Rectum and Anal Canal and Their Treatment.*
9. ROLLESTON, J. D. *Local Treatment of Vincent's Angina with Salvarsan.*
10. EMRYS-JONES, F. *The Diagnostic Value of the Bismuth Bolus.*
11. HICKS, P. *On the So-called Movable Kidney Disease.*
12. STEVEN, H. E. S. *Enteritis in a Turkish Cholera Camp.*
13. ROBERTSON, A. N. *Chronic Mucocele.*

2. This is a long and detailed article dealing with causes, symptoms, signs of genital prolapse and an elaborate description of the writer's operative methods.

4. This is a general review of the subject of vaccine therapy with practical advice as to how to get the best results. It presents nothing new.

[J. B. H.]

Obituary.

EDWARD CHARLES SPITZKA, M.D.

DR. EDWARD CHARLES SPITZKA, the well-known New York neurologist and alienist, died suddenly on Jan. 13. The immediate cause of death was cerebral apoplexy, but for some time he had been suffering from necrosis of the jaw, of malignant origin, for which he had been operated upon four times. Dr. Spitzka was born in New York City on Nov. 10, 1852, and was graduated from the medical department of New York University in 1873, after which he studied at Leipsic and Vienna for three years. From 1881 to 1884 he was editor of the *American Journal of Neurology*, and in 1885 was appointed professor of medical jurisprudence and neurology in the New York Post-Graduate Medical School. His "Treatise on Insanity" was published in 1883. He was vice-president of the section on neurology at the Ninth International Medical Congress, and at different times served as president of the New York Neurological Society and the American Neurological Association. Dr. Spitzka was especially interested in criminal psychology, and he was one of the scientists selected to witness the first execution by electricity in the State of New York. He was also one of the medical experts in the trial of Guiteau, the assassinator of President Garfield, and he expressed the opinion that the man was insane. His only son is Professor Edward Anthony Spitzka of the Jefferson Medical College, Philadelphia, widely known as an authority on the anatomy of the brain.

Miscellany.

A QUESTION OF VERACITY.

WE quote in full the following letter from Dr. G. W. Crile of Cleveland, published in the Philadelphia *Public Ledger* for Dec. 30, 1913:—

"In your issue of Dec. 19, 1913, is published a letter of Mrs. Henderson, of Washington, D.C., vice-president of the American Anti-Vivisection Society, in which she says:—

"'We eagerly offer our citations in the hope that the public will take the trouble to verify them.'

"I hope the public will take her at her word, for she did not 'take the trouble to verify' her own alleged quotations from my book on 'Surgical Shock.' On page fourteen of this monograph, the following statement is made:—

"'In all cases the animals were anesthetized, usually by the use of ether, occasionally by chloroform, either alone or with ether. In a few cases curare and morphine were used.'

"'I have again gone through the book carefully to discover what possible foundation the writer of the letter could have for her statement that this book 'repeatedly describes experiments followed by the words 'no anesthesia.' I have failed to discover any such words and, therefore, cannot see how her statement can be considered anything but a falsehood.

"As for the book having been withdrawn from public sale, that also is not true. The edition was long ago exhausted and the book is out of print, but it can be consulted at the Library of the Philadelphia College of Physicians and in various private medical libraries."

CHANGES IN THE MEDICAL CORPS, U. S. NAVY, FOR TWO WEEKS ENDING JANUARY 10, 1914.

December 26, P. A. Surgeon J. O. Downy, detached: Bureau Steam Engineering, Navy Department, Washington, D. C., to Atlantic Reserve Fleet.

December 27, Surgeon C. N. Fiske, detached: *Utah* to wait orders.

Surgeon J. M. Brister, detached: *South Carolina* to *Utah*.

Surgeon Allan Stuart, detached: *Vermont* to *South Carolina*.

P. A. Surgeon W. L. Mann, detached: Naval Recruiting Station, Dallas, Texas, to Training Station, San Francisco, Cal.

Act. Asst. Surgeon J. B. Bostick, detached: Training Station, San Francisco, Cal., to Recruiting Station, Dallas, Texas.

December 30, Surgeon H. W. Smith, Naval Hospital, Boston, Mass.

January 3, 1914, P. A. Surgeon H. A. Giltner, detached: Naval Dispensary, Norfolk, Va., to Hospital at that place.

P. A. Surgeon W. Chambers, detached: Naval Hospital, Norfolk, Va., to Dispensary at that place.

January 5, Surgeon J. F. Murphy, detached: *Idaho* to *Montana*.

P. A. Surgeon F. H. Brooks, detached: *Birmingham* to wait orders.

P. A. Surgeon D. G. Sutton: *Birmingham* to *Montana*.

January 6, P. A. Surgeon C. F. Cottle, detached: Training Station, Great Lakes, Ill., *Mississippi*.

January 7, P. A. Surgeon A. H. Dodge, detached: *Mississippi* to *Idaho*.

January 8, P. A. Surgeon C. B. Munger, detached: *California* to waiting orders.

Surgeon J. A. Murphy, detached: Naval Training Station, San Francisco, Cal., to Atlantic Reserve Fleet.

Surgeon R. R. Richardson, detached; *New Jersey* to waiting orders.

P. A. Surgeon W. H. Cole, Detached: Naval Hospital, Mare Island, Cal., to *California*.

Asst. Surgeon J. V. Howard, detached: *Quiros* to Canacao Hospital, P. I.

Asst. Surgeon C. L. Beeching, detached: *Rainbow* to *Quiros*.

SOCIETY NOTICES.

THE HARVEY SOCIETY.—The seventh lecture will be delivered on Saturday, Jan. 24, at 8.30 p.m., at the New York Academy of Medicine, 17 West 43d Street, by Prof. Sven G. Hedin, University of Upsala.

Subject, "Colloidal Reactions and Their Relations to Biology.

THE NORFOLK DISTRICT MEDICAL SOCIETY.—A regular meeting of the Society will be held at Masonic Temple, 171 Warren Street, Roxbury, Tuesday, Jan. 27, at 8 p.m. sharp.

Business.

Communications.

"Medical Inspection of Immigrants at the Port of Boston," A. J. Nute, M.D., Acting Assistant Surgeon, P.H.S.; H. B. C. Riemer, M.D., Acting Assistant Surgeon, P.H.S.

The February meeting will consist of an illustrated talk on "The Identification of Prisoners," by Mr. Gustaf Gustafson, of the Secret Service.

The March meeting will be held at the Psychopathic Hospital. In addition to the papers a clinic will be held.

Annual meeting May 12, American House. The Censors will meet May 14th for the examination of candidates.

BRADFORD KENT, M.D., *Secretary*,
798 Blue Hill Avenue, Dorchester.

Refreshments after the meeting.

BOSTON SOCIETY FOR MEDICAL IMPROVEMENT.—The annual meeting of the Society will be held in Sprague Hall, Medical Library Building, on Monday, January 26, 1914, at 8.15 P.M.

Address: "The Ninth International Otological Congress," Dr. Clarence J. Blake.

The annual business meeting will be held at 9 P.M.

Supper will be served at the close of the meeting.

E. W. TAYLOR, M.D., *President*.
ROBERT M. GREEN, M.D., *Secretary*.

THE BOSTON SOCIETY OF MEDICAL SCIENCES.—The next meeting will be held on Tuesday evening, January 27, 1914, in the amphitheater of the Peter Bent Brigham Hospital, at 8.15 o'clock.

Program:—

Exhibition of cases.

Dr. E. Goetsch, "Remarks on the Cytological Characteristics of Different Functional Conditions."

Dr. A. F. Lugar, "Spastic Conditions of the Stomach."

THOMAS ORDWAY, *Secretary and Treasurer*,
Harvard Medical School.

APPOINTMENTS.

BOSTON DISPENSARY.

DR. PAUL J. D. HALEY, Assistant to the Surgeons in the Eye Department.

DR. BENJAMIN F. MURRAY, Assistant to the Surgeons in the Ear Department.

DR. E. W. FISKE, Assistant to the Surgeons in the Orthopedic Department.

DR. ANDREW R. MACAUSLAND, Assistant to the Surgeons in the Orthopedic Department.

DR. AUGUSTUS RILEY, Assistant to the Surgeons in the Genito-Urinary.

DR. FREDERICK L. KELLOGG, Assistant to the Physicians in the General Medical Department.

DR. JOHN T. WILLIAMS, Assistant to the Surgeons in the Gynecological Department.

RECENT DEATHS.

DR. MAX DANTES of New York died on January 8, at the age of 41. He was graduated from Bellevue Hospital Medical College in 1893.

DR. EDWARD CHARLES SPITZKA died of cerebral hemorrhage on Jan. 13 in New York in his sixty-third year.